

# **REGIONALITY IN THE LATE ROMAN WEST**

**through the study of crossbow brooches,  
bracelets, beads & belt sets**

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## ABSTRACT

A close examination of spatial variability in the specified objects in an area between the Rhine/Danube and the Loire, stretching as far as Britannia in the west and Pannonia in the East. Initially a theoretical framework is set out in the context of the archaeological background. Each object type is then analysed in terms of form and decorative style and the occurrence of specific features is shown on distribution maps. Possible production areas can be suggested for different decorative styles. The distribution maps and studies of the range of variability in each category also provide information concerning the scale of manufacture and mechanisms of dispersal; in turn these relate to the level of demand and the changing function of the object.

Patterns occurring are then compared to one another and interpreted in terms of their gender and status associations and their overall economic, social, political and cultural significance for the late Roman Western Empire. Links are established between different regions and it is possible to trace the movements of those travelling with the army. Many sites can be shown to have a significant foreign element, with clusters of associated objects which can be sourced to another area. Concentrations of finds along the frontier and in linear distributions in other areas give an indication of contemporary activity at adjacent sites, and shifts in the spatial patterning of objects during the fourth to fifth century transition period provides a fresh insight into the late Roman west and beyond.



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## CHAPTER 1: THE BEGINNING

In this chapter I will attempt to establish a concrete link between the archaeological/historical background to the fourth century and possible interpretation on a deeper level. Too often theoretical frameworks are given only in the abstract and tenuous links are made between the patterns in the material that the archaeologist is trying to explain, and theory which has been developed in some other (anthropological?) environment.

I will examine the archaeological and historical 'knowledge' available for a description of the society and interactions under examination, and attempt to use theory to inform this model and to give a starting point for the analysis of any patterns in the material actually collected. Kopytoff (1986) proposes a 'cultural biography of things' examining the way function changes and objects drop in and out of the pool of commodities suitable for exchange. It may be useful to consider the object's 'life history' from this perspective as the various phases through which it passes will be intimately interrelated with its use/s by a particular society. I will consider their manufacture and distribution, the function/wearing of the objects in the society, and possible changes in use, both within the life of one object and through the extended 'life' of many generations testified to by a succeeding typological/chronological sequence. The ultimate deposition of the material and its recovery to form part of the archaeological record is also an important part of the life history. Archaeologists inevitably make implicit assumptions in their description of events from material and these must also be investigated.

### THE LIFE HISTORY OF THE OBJECT - 1. BUCKLES AND BELT FITTINGS

#### Manufacture

All suppositions about the manufacture of these objects is based on an interpretation of stylistic features which are used to suggest workshop groups or the lack of them (e.g. Böhme 1974, 92-97). Independent evidence of the production of specific objects at specific sites or types of site is not so easy to find. No authors cite any such evidence in their discussion of the objects I am studying.

To examine just one province in detail, Bayley (1992) has collated evidence of metalworking in Britain during the Roman period. This evidence for metalworking (copper and copper alloy) is widely distributed throughout the areas of Roman occupation and on all types of sites, civilian, military, rural etc. (185). In her corpus of sites, Bayley lists the types of evidence - crucibles, metal off-cuts, object moulds etc. - found at each site. Evidence for the production of buckles has been found at three sites, Ickham (245) Saltersford (265) and Vindolanda (Chesterholm), though only in the latter case is it stated whether the buckles were dated to a particular period (second-third century). The finds at Saltersford come from field walking, hence the type of site is not known, but at Ickham there has been a great deal of more recent excavation and as well as a mill and industrial site (Young 1981) a large late Roman cemetery has been excavated (pers. comm., Ian Riddler, Canterbury Archaeological Trust).

Vindolanda is of course a Roman fort. Therefore it could be suggested that in some cases the military produced their own buckles, as is known to have been the case with other objects such as tiles. However since the finds are dated to the second-third century and the metalworking evidence comes only from a single site it would be pre-emptive to use this as evidence for the set up in the fourth century when the army was very different; there is no certainty that all types of buckles were purely military anyway (see Leahy 1984). Sommer (1984, 100) summarising the Continental evidence, says that buckles occur in the civil contexts of villas and towns as well as military ones. Historical evidence refers to the *Notitia Dignitatum* in which lists of factories are given (Böhme 1974, 97). These produced military equipment, chiefly arms and armour. Southern and Dixon (1996, 89) comment that most were located in towns which were already existent production centres. Böhme suggests that illustrations of belt fittings in the *Notitia* could be taken to imply that these were also produced in such 'factories'. This seems rather speculative, though Southern and Dixon (1996, 90) refer to evidence for state regulated clothes workshops, which makes the suggestion that belts sets were also produced in this way slightly more attractive.

Stylistic 'workshop groups' is the evidence most often cited in support of production in a particular area. Inevitably I may be making use of this type of evidence when interpreting stylistic groups in my own material. Decorative styles and forms are used to group material together into sets, which are then sometimes explained as the products of a particular workshop. There is a risk of running into circular arguments, though since there is so little empirical evidence available the possible siting of regional workshops from distributions has to be used in this section. Problems with the approach, such as whether stylistic groups necessarily distinguish workshops, and related questions, will be discussed later on.

Böhme (1974, 93) says that several distinct workshops can be suggested from closely similar groups of buckles with a restricted distribution. One such workshop is identified on the lower Danube on the basis of a particular type of animal frieze. Other 'Western' workshop/s covering northern France and the Rhineland are shown by buckles with niello (black silver sulphide inlay) restricted to northern France and Belgium, and buckles with a characteristic tongue with a cross piece characteristic of Western workshops (Böhme 1974, 96). Böhme says more generally that between the end of the fourth century and about 435 A.D., (using his later revised dating, Böhme 1987), there were clear differences between the Gallo-Belgic and Danubian production centres (97). In contrast, he says that the distinctive chip-carved belt sets comprising many different pieces (see Böhme 1974 Abb. 54 for a reconstruction) were produced in a central factory, at the same time as the local regionalised production of smaller simpler items. This is based on the uniformity of elaborate belt sets throughout the area of study (an area between the Elbe and the Loire) and the complicated production techniques required which he assumes would be beyond the capabilities of small locally situated workshops. This 'central production site' is assumed to have gone out of operation by his latest time period, Stufe 3 (the end of the fifth century), as late buckles and belt fittings show more individuality, and are again argued to be the products of local craftspersons (97).



Simpson (1976) mentions some regional variety in distribution. Penannular or concave loops and triangular buckle plates are said to be Hungarian or Austrian (193-6). Simpson's Groups III and IV have a distribution confined to the more easterly provinces. However he does not take this to be evidence of regional workshops and instead concludes that since buckles are often associated with crossbow brooches in graves they were probably produced in a state factory in Pannonia or Illyricum (received wisdom based on the well established supposition about crossbow production, see below). Sommer (1984) follows Böhme by suggesting production in small workshops, and says that these coincided in some cases with civil administrative districts, or in other cases with areas 'naturally' demarcated by the landscape (102). He agrees with Böhme about the basic distinction between Danubian and more westerly workshops in Stufe I and II (103) and also describes local groups with much smaller distributions such as eastern Gaul (a certain kind of violin and propeller shaped metal fitting). In Stufe III, the end of the fifth century, Sommer claims that the former provinces of Belgica II and Germania II can still be differentiated by means of particular belt types, strap ends and animal head buckles.

Hawkes and Dunning (1961) suggest that some types of buckles, for example their type ii a, which has confronted dolphin heads on the loop (50-51) and a very long and thin buckle plate, are produced and distributed only in Britain. This will be definitively underlined in a forthcoming publication by Corney, who will show clearly that hundreds of these distinctive buckles and attached plates and corresponding 'Tortworth' strap ends, are found in discrete distribution areas within Britain, with a bias to the south-west, around Wessex and the Cotswolds (pers. comm.). Only a very few (in single figures) have been found on the Continent, even taking into account unpublished museum finds; I did not come across a single example when examining museum collections in Belgium, France and Germany. He suggests that production was limited to Britannia Prima and therefore that there was perhaps some military or official regulation of production and distribution.

### Issue and Use

It is now disputed by most of those working in this field that belt sets were purely items of military dress, as mentioned above. Hawkes and Dunning (1961) show that buckles from known contexts occur predominantly in female (Anglo-Saxon) graves in Britain. It could be argued that these are being re-used and in their original context in Roman Britain they might have been worn by men. However, the lack of these buckles and belt fittings on late Roman excavated sites suggests that they were being produced in the early fifth century rather than the fourth, and therefore perhaps they never had a military function. Some elaborate chip carved belt sets were worn by officials, for example a belt with clearly visible propeller shaped fittings on the wall of the grave chamber of an official in Silistra (Bulgaria) mentioned by Sommer (1984). From historical evidence, Tomlin (1976, 191) says that Valentinian restored the status of officials by telling them to wear again the belt they had been deprived of. However Sommer goes on to say that the archaeological evidence undermines this association. He has examined graves with elaborate type belt sets and found that the majority in his study area occur in graves without the corresponding mark of official



rank, the crossbow brooch. He also mentions elaborate belt sets (Sommer Serie 1 Var 3) found in female graves in Hungary (Sommer 1984, 86). Simple buckles and buckle plates have only been assumed to be military on the evidence from elaborate belt sets anyway so there are in fact no grounds whatsoever for assuming an exclusive use by the military. The question remains open and it may well be the case that some types of buckles are military and some are civilian, or that those worn by the military are also worn by civilians. It seems likely that the distribution mechanisms of military items, which are a mark of rank and may have been produced under some kind of control, and utilitarian or decorative items produced purely to meet consumer demand, might be different, and these differences might be expected to show up in the archaeological record. Buckles and belt fittings which have a military function might therefore have a different distribution from those which are worn by civilians. Love (1991, 252) mentions the frequent interference of the state in trade, and increasing state control in late Antiquity. State factories or 'fabricae' would have been staffed by workers who were at least nominally soldiers (Jones 1964, 835) and Love (1991, 123) comments that they would not have had the same profit motive as market driven outfits (features of controlled versus market-led distribution are discussed below for crossbow brooches and bracelets). If buckles can be shown to have more than one kind of distribution at a particular time and place this may be revealing of more than one form of production. The distinction could be time-related; buckles could have a military significance at some times and not at others.

Given the constraints of the archaeological record, it will in fact be very difficult to find out if an object or even a specific type has changed in use during its life span or the life span of the type in question (central to Kopytoff's theory of de- and re-commodification, Kopytoff 1986). The final destination of the archaeological object is generally the only one that can be known. However it is possible that the trajectory of an object over several generations can be elucidated by looking at the patterns of distribution of a typological sequence of objects. Buckles and belt fittings do show a typological sequence of development which enables some types to be dated. Discrete distributions on military sites of one type would therefore suggest the prescriptive use of the item. The appearance on civil sites of buckles related typologically to those which had been military (for example, in female graves in Anglo- Saxon cemeteries, see Hawkes and Dunning 1961) would attest a different use, implicitly signalling other kinds of non-material transformations.



## THE LIFE HISTORY OF THE OBJECT - 2. CROSSBOW BROOCHES

### Manufacture

There is a single widespread piece of received wisdom about the production of crossbow brooches which is not based on any concrete evidence. It is often said (for example, Riha 1979, 171) that crossbows were probably manufactured in a large state regulated production centre, connected with the making of military arms, and probably situated in Pannonia. The evidence for this is principally the *Notitia Dignitatum* as mentioned above. 'Fabricae' are known to have been situated at, for example, Lauriacum, Aquincum and Carnuntum (Southern and Dixon 1996, 89). The supposition is that since crossbow brooches function as markers of rank, and have a standardised appearance throughout the Empire, their production must be controlled, and Pannonia is a probable location since it has extremely large numbers of these brooches (Patek 1942, 148). Large numbers of brooches could, however, be a result of graves with worn personal ornament being more common in Pannonia than other provinces. In this thesis I will carry out a closer examination of the numbers and types of brooches found in each province which may provide further evidence one way or the other. No evidence of metalworking sites is ever used to support the suggested production area although in a discussion of processes of manufacture Keller (1971, 27) does mention an incomplete brooch still with casting 'fins' found at Szony-Brigetio, in Pannonia. Toth (quoted by Gugl 1995, 43) uses stylistic evidence; namely the silver brooches with inscriptions and niello spirals along the side of the bow, which apparently from their distribution suggest production in the south of Pannonia. In Bayley's work on metalworking sites in Britain (Bayley 1992) there is no evidence for the specific production of crossbows in particular, but if the object moulds/incomplete castings found were listed they would give a very bizarre picture of items produced which is obviously limited. It is also said of the late gold and gilt bronze crossbows that the technical skills required are so great (since they are constructed from a great many pieces of sheet metal) that they must be produced by a single highly skilled workshop. Some pieces are argued to have been produced in one place on the basis of stylistic attributes, for example type 5 crossbows with portrait medallions and a chi-rho inscription. Laur-Belart (1959, 66) thinks that these came from a specific workshop. Engemann and Rüger eds. (1991, 191) say that early gold brooches with imperial inscriptions were made in a central workshop on the basis of their rich decoration and function as insignia. There is, however, some discussion of possible regional production, again based on the stylistic features of the brooches. Jobst (1975, 92) says that the supposed uniformity of the brooches shown by Keller's typology is misleading as Keller only used brooches from Pannonia, therefore side-stepping any possibility of regional variation. Keller himself suggests that some brooches were of local Raetian manufacture (Keller 1971, 174-5) and says that for the majority it is impossible to be sure of the production area. Clarke (1979) notices regional variation in his difficulties in placing the brooches from Lankhills within Keller's typology. He suggests the atypical features of these brooches may point to production in Britain.



## Issue/Use

The evidence for crossbow brooches functioning as markers of military and official rank is strong, discussed for example by Jobst (1975, 93), Heurgon 1958, etc. Heurgon (1958, 23) using historical sources, states that the brooch, and cloak which it fastened, were known to be the uniform of all officials as well as those of rank in the military. Brooches were sometimes even fixed on by the Emperor's own hands in ceremonies of investiture (Heurgon 1958, 23). A number of crossbows are known which have an inscription along the side giving the name of the Emperor (Pröttel 1988, 348). Burnett (1987, 129) discusses the economic significance of such donatives citing a number of gold objects such as bracelets which often occur in precious metal hoards along with high denomination 'multiple coins' (medallions). One such coin cited by Burnett even shows crossbows, among other gold items, on the reverse. Objects such as the Projecta casket from the Esquiline treasure show individuals wearing crossbow brooches. This can also be seen on numerous mosaics, ivories and pieces of gold and silver plate (24). Heurgon says that this shows that the brooch was not restricted to only those of very high rank (Heurgon 1958, 24); supposed by some who have pointed to the example on the Stilicho diptych. He also uses the art historical evidence to reject the proposal that different types of crossbow brooch further distinguished different ranks, for example, the crossbows shown on the Projecta casket and the Stilicho diptych are the same type (24). By the time these items were made, however, there was only one type of crossbow brooch still in production, the type 6 shown here. Keller (1971, 27) suggests that the occurrence of the brooches in varied materials - gold, silver, gilt bronze, bronze - would have distinguished the social position of the individual within the rather eclectic group of those entitled to wear the brooch. Crossbow brooches do have a strong bias to military sites, for example the largest single collection found in Britain is from Richborough (Bushe-Foxe 1928, 1932, 1949, Cunliffe 1968, and Bayley et al unpublished), and that from Austria Lauriacum (Jobst 1975). Although Clarke (1979) suggests they need not all have had military significance, and Jobst points to crossbows found in the graves of women and children (Jobst 1975, 94), it is clear these are very much in the minority and crossbows have a strong association with male graves on military sites in which they are clearly most commonly worn on the right shoulder. Only 158 crossbow brooches in my database came from contexts where the precise spatial arrangement of the grave was known. Of these, 48% were found on the right shoulder, 10% on the left shoulder and 5% on the breast. 37% were not worn at burial. This corresponds with the known art historical evidence where crossbow brooches are always depicted on the right shoulder. The cloak fastening on the right hand side would leave the sword arm free, whereas if fastened on the other side a right-handed person might experience some restriction of movement by the cloak. It is possible that the brooches found on the left shoulder are those of left-handed persons.

Crossbow brooches were, then, most likely issued to military and civilian officials. Therefore their distribution, and that of some belt sets which probably had a similar function, may not necessarily be connected to localised patterns of trade and exchange. This independence is more likely if the brooches and belt sets were produced in regulated factories. Of course regional



variants could be supplied to the army by local workshops to meet certain specifications. The army demand for the production of brooches would have created the initial market. Brick and tile studies throw some light on trade and distribution mechanisms operating during the Roman period for items produced for the military market. Peacock (1982, 145) discusses the work of Gonzenbach on tiles made by the military for their own use and stamped with the unit of manufacture, in this case the legions based at Vindonissa/Windisch. Distribution seems to be along the road network at various defensive points. Peacock also says that brick and tile were transported long distance, along the Rhine and Danube. Stamps of the legions based at Xanten are found here and at sites down the Rhine (145).

The brooch would be of course move with the civil or military official. Officials and the military might be expected to travel more widely than the average citizen and Southern and Dixon (1996, 44) say that long distance transfers of troops still occurred in the late period; the distribution of brooches will be affected accordingly. In the late Empire some parts of the army, however, such as the frontier troops, were quite static (Maxfield 1981), and the mobile field army was supplemented by regional field armies during the fourth century (Southern and Dixon 1996, 19). Gold brooches might have functioned as economic as much as sartorial items, or their prestige value may have led to their becoming an exchangeable commodity; a transfer from primarily symbolic to primarily monetary value. This would presumably result in different kinds of deposition (perhaps in hoards with other precious metal items), and a change in the spatial patterning of the material.

### LIFE HISTORY OF THE OBJECT - 3. BRACELETS

#### Manufacture

Workshops for the manufacture of copper alloy jewellery, statuettes etc. are known (evidence from Bayley [1992] is discussed above) and it seems likely that bracelets were produced in such workshops. Cool (1983, 331) mentions a clay mould for a finger ring at Silchester, and a brooch mould and parts of unfinished objects at Gestingthorpe, which workshop may have been producing items in the fourth century. The production of jewellery at temple sites is also possible, with metalworking debris at Woodeaton (Cool 1983, 332), Nettleton (Wedlake 1982) and Lydney (Wheeler and Wheeler 1932, 51), for example. Woodward and Leach (1993, 328) suggest that jewellery was probably manufactured at temple sites purposely for use in ritual deposits, perhaps because some types of jewellery such as simple strip bracelets were easy to produce. Some evidence for the deposition of bracelets at temple sites in Britain and on the Continent is given by Swift (1995, 61-2), but it is concluded that their secular use probably outweighed any use as a purely ritual item.

Again the principal evidence for workshops tends to be regional distribution patterns of stylistic attributes. Cool (1983), studying personal ornaments in Britain, identifies several such workshop groups for the third and fourth centuries, based on closely similar finger rings. She also



isolates workshops for the earlier period using stylistic evidence (31). In particular, her workshop groups identified for early bracelets correspond to those found for pins. The assumption is that the same workshops were producing a range of different goods. She suggests that, on the basis of plausible marketing zones based around towns (in which metalworking occurs more frequently than it does on other types of sites), in the early period there were a few large workshops with some more minor outfits copying their products (349), but it is difficult to tell if this pattern continued in the third and fourth centuries. Indeed, looking at the bracelet evidence in the fourth century, Cool says that the light bangle type characteristic of this period shows a homogenous spread in southern Britain, and concentrations of local variants seldom occur. Using this evidence she argues for a number of small workshops, but in general the similarity of bracelets to one another is very high (180), and naturally this will obscure, or undermine the idea of, local workshops. Cool says that third and fourth century metalwork was generally very standardised. It must be emphasised that she looks only at Britain and therefore does not assess production on a wider scale; regional workshops serving different provinces or dioceses.

On an intra-provincial scale Keller (1971, 174-5) mentions some regional grouping of bracelet types which seem to occur only in Raetia, and some with a distribution along the Danube, but he cautions that this does not allow for areas which have not been studied, and in any case he makes no claim that these distributions represent workshop groups.

#### Issue/Use

Female personal ornaments such as bracelets, pins and brooches would be subject to the demands of consumer taste. Hence trade, marketing and the economy become important in a consideration of the distribution of these objects. Love (1991, 212) lists qualifications of a market economy such as coin circulation, urban centres, consumption taxes etc. which can be seen to be in existence during the Roman Empire. Pottery studies give an idea of economics, and regional distribution zones operating in this period. Woolf (1991, 287) divides trade into local, regional and empire wide and says that the latter was rare, and regional distribution seemed to be the norm. This is shown by, for example, the fourth century regional zones of distribution of red table ware in Spain, northern France and Britain. Scull (1995) says that the Empire probably consisted of several interlinked regional economies and any trade across regions was primarily state administered to supply, for example, the frontier armies. Duncan-Jones (1990) considers the coin distribution and concludes that, since coins stay where they are first sent from the central production areas, building up distinctive profiles in different regions, this undermines supposition of inter-regional trade. However he also makes the point that trade could occur over long distances without coin movement, since merchants, for example, could buy new cargo with profits gained in the country where the goods were sold, and thus only goods and not coins would move (46). The Empire is described as a non-integrated economy (58). Looking at the goods



themselves, the most work has been done on pottery distributions, which give some idea of marketing zones and strategies for any traded goods. Peacock (1982) describes two types of industry, workshops which are situated in, and serve, a particular locality, and larger industries producing goods in one place and exporting them over long distances; the obvious example is the Samian industry (90). (A typical local distribution pattern is shown in Peacock 1982, fig. 56, a particular form of Oxford colour coated ware.) Clusters exist around the production area and fall off with distance (107). This might be described as a classic regional distribution where the production site is known and the patterning exhibited results from local supply/ demand. It may be the case that high status goods (such as Samian) travel further than low status items as there is a stronger demand in areas distant from the source; instantly recognisable goods which confer status have a stronger trajectory as they cannot be replicated locally to the satisfaction of the consumer.

Trade will also be affected by the relative ease of transport. Brown (1971, 13) says that it was cheaper to transport grain the length of the Mediterranean than to send it 75 miles inland. The Rhine and Danube, and tributary rivers, were particularly important in this respect in the area of study.

Bayley makes the point that in this period goods would be sold from their place of manufacture - a shop would also be a workshop (Bayley 1992, 178). Of course this does not mean that they could not be traded away from the production site also. Objects produced in various workshops would be sold in a competitive market in which stylistic preferences would affect the successful sale of items. Bracelets were often deposited in shrines (see above) and some may never have been actually worn, but they were mostly, it can be assumed from frequent occurrence in cemetery, small settlement and town sites, part of everyday costume. Jewellery was a common marker of wealth and status in the Roman Empire (Stout 1994 in Sebesta and Bonfante eds.) but this can only really be applied to luxury items in gold and gemstones. There is some knowledge about 'traditional' dress in this period. Garbsch (1965) describes 'folk' costume in Noricum and Pannonia in the first and second centuries A.D. but these regional styles apparently eventually become subsumed under Roman culture (132). This would appear to be the case for other items also - pre-Roman Celtic preferences tend to become overtaken by more 'Roman' material culture. For example, pre-Roman and Roman bead styles can be easily distinguished from one another in the Roman provinces (see Guido 1978). Van Driel Murray views fashion (which may be defined as relatively frequent changes in style synchronised over a very large area) as both a reflection and an expression of social change and mobility. In an article on footwear she says that shoe fashions in the third century are definitely Empire wide (Van Driel Murray 1987). Sewn rather than nailed footwear grows in popularity in the fourth century and again this is a universal phenomenon. This is following Germanic rather than Roman custom, and it is known that late Roman aristocratic society was influenced by Germanic styles of dress (Brown 1971, 21). Van Driel Murray's work on shoes (Van Driel Murray 1987) shows that this tendency permeated most levels of society. Similarly Germanic double sided bone combs become popular in the Roman world in the fourth century and beyond (Galloway 1979). Hair

styles are also a frequently quoted example of fashion operating in the Roman world, with hairstyles changing about every twenty years in the first and second centuries A.D., but it should be noted that after this period fashion ceased to be much in evidence and the same hairstyle was worn for most of the succeeding period (Walker 1995, 97-98). From the third to the fourth century roughly there are some widespread general changes in jewellery fashions (rings and brooches are less popular, bracelets and necklaces are more popular) but within the fourth century the types of jewellery found, in graves, settlements, religious sites etc. tend to be predictable and it seems that, although there is not the fine resolution from dating which might bring out slightly different fashions fluctuating within the fourth century, there is little change across the generations. Neither is there much evidence of distinctive dress customs which distinguished one province or geographical area from another, though in Pannonia a very noticeable fourth century custom exists where large numbers of bracelets are worn on the left arm, in some cemeteries only by young girls, in others by women of all ages (Lanyi 1972), though of course this could be a burial rite and not reflect dress in life.

Wilde (1985) surveys clothing in Britannia, Gallia Belgica and Germania Inferior and concludes that, admittedly primarily from the evidence of funerary monuments which may be slightly misleading, the same garment - the 'Gallic coat' - was worn across the north western provinces throughout this period by both sexes (369) and at all social strata (374).

There is no evidence for the re-use of bracelets in other ways or transformations in the way they are worn over time - in fact this seems to be remarkably consistent, with one bracelet worn on either wrist in most areas of the Roman world from the first century to the fourth (Cool 1983, 19-22).

## THE LIFE HISTORY OF THE OBJECT - 4. BEADS

### Manufacture

There is very little direct evidence for the manufacture of glass beads, though one site is known at Trier where multi-coloured glass beads were definitely produced in a glass workshop (Loeschcke 1925). Other glass workshops have been identified in various places but it is not known if these produced beads also. Tempelmann-Maczynska (1985) summarises the evidence, mentioning the very large glass producing centres known at Trier and Köln in the Rhineland (133) and other sites in production at various dates. She says that some sources argue for the production of glass vessels and beads in different workshops because of the differing technical skills and tools required (132). However she qualifies this by saying that although multi-coloured beads must have been produced in specialist workshops, simple one-colour examples could have been produced in workshops which were mainly for the manufacture of glass vessels. A workshop is mentioned in the Argonne which manufactured beads and mosaic tesserae (133). Forbes (1957) gives some evidence for glass working in the Western Empire though he is mostly unspecific about the period in which the workshops were in operation and the types of glass objects produced. A fourth century workshop in Caistor-by-Norwich is mentioned (189) and Forbes says



that the Argonne glass industry kept going into the fifth century (193-4). Guido (1978) suggests purely from appearance, that due to a wide distribution of similar beads, they were manufactured in relatively few places. Gilt-in-glass beads were popular in the Eastern Empire throughout the Roman period. Some examples occur in Britain before the fourth century. Then during the fourth century they also appear in other areas of the Western Empire. Analysis of gilt-in-glass beads found in Britain has shown them to have close correlation in trace elements with beads from Faras in Egypt. On these grounds manufacture has been argued to be Eastern (Boon 1977, 197). However Boon does not think this is evidence of long distance trade but of individuals travelling. Schulze discusses a particular type of annular bead with a wavy trail decoration which was probably produced within the Empire and then exported beyond the frontier (Schulze 1978, 55). Bead production is seen in the workshop excavated at Trier but in the fourth century the distribution of this type of beads falls outside the empire (map p. 54) and they only become popular within the empire at the very end of the fourth century, and on into the migration period (map p. 55). Hence there is some evidence of the long distance trade of such items, which may be facilitated by their small size and ease of transport - beads could easily be included alongside other more important (more profitable for trade, i.e. more in demand) goods. Export from the Roman world to the Germanic hinterland also raises interesting questions about 'ethnic' preferences and the workshops catering to these preferences.

The same arguments of consumer demand given above for bracelets must be emphasised. Most late Roman beads are quite different from the annular, usually opaque and multi-coloured beads discussed by Schulze (1978), and found in the workshop at Trier (Loeschcke 1925), which are closer to Celtic pre-Roman beads (see type figures in Guido 1978). They are usually smaller, translucent, and with a small perforation, in a single colour and a more definite shape. Some could be said to be copying gold and gemstone examples, for example emerald beads copied by green hexagonal glass beads - the most popular shape for green beads. It is interesting to note that this follows the shape of the crystal structure for emerald which is hexagonal. These gemstone examples could have been part of a high status uniform 'Roman' culture, and therefore copying could be seen as an association with 'Roman' status /fashions. However the favoured late antique style among the very richest was for heavier settings (Stout 1994, 80) which are not generally imitated in glass.

Beads were also sometimes worn as amulets in antiquity (Heavernick 1968) especially in Germanic areas beyond the Roman frontier. Meaney (1981, 209) and Koch (1976) speculate that some types, such as jug shaped beads (for example, at Trier, Loeschcke 1925, Abb.1.2), might also have had this function within the late Empire (Koch 1976, 74). This would affect their manufacture and how they were worn. While beads would have had little intrinsic worth, once endowed with other nebulous powers they may of course have become of high value, which might affect patterns of exchange and loss.

## LIFE AFTER DEATH - ALL OBJECTS

The objects present in the archaeological record will obviously differ from those circulating in antiquity. However as long as broadly similar factors affect all types of object the proportions of objects recovered relative to one another will still be the same. A number of factors will have only affected some objects. Gold and silver items will be better cared for and less likely to have been lost. This might also be the case for objects which are status indicators. Many metal and glass objects will have been melted down for reuse. Alternatively, funerary rites might bias the occurrence of material in grave contexts. This is particularly likely where these rituals were themselves regional. The large numbers of bracelets occurring in Pannonian graves (see above) illustrates this effect. This is an undoubted result of a custom in life and /or death of many bracelets being worn.

Once the archaeological processes of excavation and recording are reached some other factors come into play. There may be bias in the types of sites excavated (towns and villas favoured over rural settlements; military preoccupations favour the excavation of limes forts along the Rhine and Danube). In France, many large late Roman cemeteries were excavated in the 19th century and much of this data has been lost or is recorded incompletely or inadequately. Once the items are out of the ground significant numbers may have been lost to collectors and antiquities dealers who may have preferred certain materials or types of object. The upheaval caused by bombing in the Second World War was particularly apparent in the German museums I visited with the context details of many items having been lost. Hence the number of brooches recorded, for example, at Köln is misleadingly small - far less than the actual total in the collection at the RGM Köln, many of which must be local finds, but they could not be used because find spots are no longer known. Mis-associations have also come to light; for example Heurgon (1958, 29) refers to the Tournai and Innsbruck crossbow brooches as being separate finds, seemingly not aware that the Innsbruck example is most likely a copy of the Tournai brooch (now lost) made during the occupation of France and taken to Austria during the Second World War (Dr J. Vlaeminck, pers. comm.). Considering the publication of finds, old site reports especially tend only to publish the most 'interesting' finds - for example only a fraction of the crossbows from Richborough have up until now been published despite a series of excavation reports. Some types of finds are privileged above others - gold and silver items get more exposure in museum catalogues, etc. Brooches are favoured above other types of small finds. Beads are often published extremely poorly with no indication of precise numbers and/or colours. Standards of illustration of objects vary widely, and where an object is recorded by two separate drawings, they are occasionally worryingly different.

Bias in my collection of this data must also be recorded. This is mostly evident in a split between the types of data accessed for the various countries in the area of study. There will probably be a bias toward information collected for Britain for obvious reasons. However fewer museums have been visited in Britain than in France, Belgium and Germany, since large amounts of data were available from site reports for Britain. Conversely, the few published reports for



some important Continental sites (Trier is the classic example with very few finds published at all) mean that there is a heavy reliance on museums for these areas. Problems with French publications have already been noted. For Hungary, each site was so prolific that relatively few sites have been used, which could skew the data, especially since more cemetery sites have been published than other types of site. There are some gaps where access to important collections was refused (Bonn, Worms, Namur) or severely limited (Strasbourg). Time constraints will also have had an effect on the data gathered during my museum trip abroad. I did not draw all objects. During data-collection I generally only recorded items examined in person or those illustrated; purely written descriptions of material were used in only a very few cases where there was no risk of ambiguity. One specific bias in the collection of data on bracelets and beads must be noted. Most types of bracelets, all crossbows and buckles, and some types of beads, can be dated stylistically to the fourth century, and therefore museum collections with no context date could be used as long as the finds were provenanced. There are some types of bracelets and beads, though, which are found in both the third and the fourth century, and only dated examples of these types could be used. Now since there is a bias to excavation reports used for data in Hungary and Britain, the areas where museum collections were the main source (France and the Rhineland) may show misleadingly smaller numbers of these types of beads and bracelets. Since the data has been collected over roughly two years there may also be some difference in the way I was looking at and recording data at the beginning and the end of this period, though I have tried to keep things consistent by having categories to fill on a database with only a range of options for description. At the end of the data collection I have tried to check through all the data again to ensure it is consistent but inevitably some items could not be re-accessed (the British Museum department of prehistoric and Romano-British antiquities is currently being demolished and items are in store, to use a more extreme example, and I have drawings of most but not all the objects recorded from Continental museums). Ideas formed about possible patterns in the data may also have affected tendencies to find those patterns though I have deliberately not investigated patterns arising in the data during collection as I wanted to remain as unprejudiced as possible.

Finally there will inevitably a certain amount of bias in favouring one interpretation or approach over another. I think that the nature of personal ornaments is directly related to, represents, structures and is structured by, the ideas, values and cultural norms of the wearers, and therefore attempts must be made at interpretation on this level.

There are four common assumptions which are made when discussing evidence for the production and distribution of objects:



1. High technical skill required = one or very few specialist workshops, and export
2. Regional variation = workshop groups and local distribution
3. Standardisation = centralised production and export
4. The above criteria are thought to completely account for diversity or homogeneity and workshop groups are an end in themselves. The discussion stops here and the question of consumer demand, and why workshops might be producing their own distinctive styles, or why there is central production and export, is not generally discussed

1. High technical skill = one or very few specialist workshops.

On the grounds of practicality, it is easier and cheaper to train a few craftspersons to make things rather than training many to do the same thing if the numbers of objects being produced is fairly small. Quality control will also be easier and the objects produced will be more consistent. There is some evidence that high status items were produced using closely similar techniques on different objects. Very late crossbow brooches (Pröttel type 7) have both screw terminals and openwork '*opus interrasile*' foot. Brown (1997) shows that these features are shared by gold bracelets of the same period. She suggests the same workshop produced both items. Crossbows made in gilded sheet bronze which are constructed from many separately made pieces (Drescher 1959) and chip-carved belt sets with complicated patterns, are also said to be produced centrally on the basis of the complicated techniques required for their production. However the vague terminology used allows a bit of leeway - what exactly is meant by 'a few' production centres, for example? *Opus interrasile* decoration was very popular in this period, on other items aside from bracelets and very late crossbows (Ogden 1992, 49). Considering the chip-carved belt sets, in actual fact Böhme (1974) rightly places more weight on decorative detail and gives several geographically distinct variants of elaborate belt sets (93-96), evidence for more than one workshop even though the production technique is supposed to be so complicated. He still assumes them to be produced in 'imperial factories' (97). There are examples in antiquity of craftsmen being sent to different places to set up new workshops and, presumably, to train the workers they found there (Tempelmann-Maczynska 1985, 133, for example, mentions glass craftsmen travelling in this way). Neither is it beyond the bounds of possibility that the techniques required to produce the objects normally referred to as the products of specialist workshops were widely known in the late Roman period. Chip-carving appears on a wide variety of objects, not least on equal arm 'Germanic' brooches worn exclusively by tribes beyond the frontiers (Böhme 1974, Abb. 5; Karte 5 for distribution). Niello inlays were common not only on crossbows and buckle plates but also on silver plate. Unless one workshop had a monopoly in all these techniques, which must be very unlikely, it seems that they were not exclusive. Fitting together a sheet bronze crossbow would be as easy as making a paper geometric model from a pattern. If the pattern is known (and it could easily be taken from a finished brooch) it is not too difficult to work out how to put it together. Suppositions about highly skilled workshops seem to be another variation on the theme that the 'natives' could not do anything as well as the Romans in the provinces. It is more accurate to try and derive workshops from the similarity in details of



technique and decoration rather than make a blanket assumption because the object takes more skill than a simple metal casting; though two identical highly decorated brooches might be assumed to be the products of the same workshop more readily than two identical brooches decorated with one or two bevelled lines.

2. Regional Variation = workshop groups and local distribution.

3. Standardisation = centralised production and export.

In ethnographic studies, Hodder (1982) finds evidence to both support and undermine these pronouncements. While in studies of the Lozi in Africa some items show spatial correlation relating to the place of production, some do not (118), and it is seen that looking at the attributes of spears produced by a number of smiths in the Baringo district of Kenya, localised stylistic features are seen to occur despite the fact that spears are widely traded; this is because groups in different areas have different preferences (119). Localised style zones are much smaller than the areas covered by each individual smith (62). Hodder suggests that this is due to consumer demand (63). Similarly, using evidence of widely similar but village produced goods in Baringo, he says that a social pressure towards conformity will be enough to produce uniformity in style despite the fact that objects may be produced in several different workshops (68). Hence the above assumptions are seen to be not necessarily true, and a close examination of the material is required before interpretation is attempted.

It is known that metalworking and the production of jewellery was carried out on numerous sites in each province of the study area (for example Britain, see Bayley 1992). Cool (1983, 216) says that in the fourth century a number of workshops were producing closely similar items, which would correspond to the Hodder model of desire for conformity. Decorative patterns which are alike might be produced by different workshops. Conversely, a single producer catering to differential local demands might make, for example, bracelets with different decorative motifs and export each to a different area which had a preference for these motifs specifically. If this were the case, the bracelets would then be likely to share at least some attributes - for example they might be of the same width with an identical type fastening, but different decoration along the flat surface. Objects, however, which have a large number of stylistic attributes in common, in form, decoration and technical considerations, and which are confined to a specific geographical region, might be better explained as the products of a single workshop. Cool (1983, 334-6) thinks that it is unlikely that objects with a high similarity to one another like this could have been made by independent workshops. Hence it is the less visible attributes, which the customer will not notice so much, which might show up whether there is local production or not. Items which are required to be similar will be so, but to a lesser degree if they are produced by many workshops than if they are exported from a central production area (unless there is some transfer of moulds for casting such objects of course). It may be relevant here to consider the evidence from coin production, since the official requirements for currency would presumably tend to be for a homogenous universally recognised coinage, whether produced in one place or several. If there

is some precise specification to which objects must conform, then they could be made by separate outfits and pass some kind of quality control of uniformity. However, if the quality controllers are widely separated this will be difficult to enforce and workshops might think they were producing the same styles of objects but in fact not be doing so. This is the case with currency. It is known that there were a number of regional mints in this period (Burnett 1987, 130) and that, apart from deliberate distinctions such as the individual mint mark, coins produced by each mint are not exactly similar, but they do conform to general specifications for design. Burnett suggests that perhaps written instructions only were sent out, leading to some individuality in interpretation of the common motifs (140). This of course must apply to objects in the same chronological timeframe, as through time the same workshop could drift in its interpretation of a particular style of object. Hence a similar design, but small idiosyncrasies, could attest separate production in space or time.

There must be careful consideration of all the features of a set of objects to determine the likelihood that all the objects in the set were manufactured in the same place. Perhaps more important, it is either the direct requirements of the state or the indirect preferences of the user which really determine to what degree regional patterning exists in material. What is most interesting is not whether regional groups represent specific workshops or not (which may in any case be impossible to determine), but what desires they map. What is the impetus for workshops producing superficially similar or different material to one another? What consumer tastes might favour the central production of objects? What are the pressures of consumer demand? How does trade respond to/structure this? Bourdieu says that the producers of objects cannot be attributed with intentions free from the constrictions of social convention (1984, 29). There has been a vast output of archaeological and anthropological literature in the past decade or so which attempts to deal with the 'meaning' of stylistic variability, some of which will be discussed below, and all of which is trying to answer the simple question, why do people want what they want?



## OBJECTS OF DESIRE

models: uniform - fashion - tradition

The main requirement of a uniform is eponymous. A uniform must be standard, constant, recognisable. Its role is ideological, and its symbolism is intended to be immediately understood. Bourdieu (1977, 170) says that 'because any language that can command attention is an "authorised language" invested with the authority of a group, the things it designates are not simply expressed but also authorised and legitimated'. The language here is material culture, and the state has a desire to clearly demarcate higher status soldiers and civilian officials by providing them with badges of authority. In this way they are legitimated by the Roman state. Such markers of rank signify Roman status and authority under the Roman Empire. It would be expected that such symbols of authority will be closely similar to one another, otherwise there might be a problem with recognition and credence. The uniformity in the way in which crossbow brooches are worn is a prime example. Fastening the cloak on the right shoulder, they are clearly visible, and since almost always worn like this, the message in each case is probably the same. However conventions which become solidified have often subtly changed in meaning. For example, Chapman (1995) discusses the function of Scottish 'highland' costume as now worn only by Scottish regiments as formal dress. In this case, the garments being worn are used in quite a different context, and with a different 'meaning', from that in which they originally developed. Chapman draws attention to the way in which costume becomes frozen at a particular point in time, and re-used without change from then on, so the way in which it is worn is always the same, but the meaning has not stayed the same. We should be similarly wary of thinking that, because the crossbow is worn in the same fashion at the start and close of the fourth century, it has not changed at all in ideological function.

Regional variation in crossbow brooches might be explained in a number of different ways. Since the brooch was a mark of identity it might signal a particular regional association (a legion, limes troops as opposed to the mobile field army, etc.) which association would be sanctioned by the state which gives the object its meaning in at least some periods. Group identity might be seen by the state as a useful focus of loyalty, similar to, for example, the standard borne by each legion. If there is regional variation in decorative patterning with respect to provincial boundaries, identity might be with the province as a whole rather than the army specifically. However if spatial variability is not deliberate, (not obviously conforming with political or military organisation) it perhaps shows state authority being undercut or subverted as the uniformity of the object is eroded - control over its appearance has lessened. It might be expected in an item of mostly symbolic significance that variation through time would not be desirable. From this point of view the typological development of the crossbow brooch is interesting as it shows a certain amount of presumably uncontrolled mutation (there are no rigid divisions between the types). Hence a simplistic 'meaning' for crossbows, explicitly given by the state, and constant through time, cannot be assumed. The typological development must be accounted for in other ways; the

crossbow brooch must have other connotations. Its value must be enhanced by being the 'right kind' of crossbow at a particular time. The metamorphosis from one type of crossbow to another could be linked with fashion. Uniforms are subject to fashion as civilian dress is, though perhaps to a lesser extent, and we know that in the fourth century the military were wearing 'barbarian' items such as trousers (Wild 1985, 377). This was because many of them *were* barbarians, but there was a knock-on effect; 'barbarian' dress actually became fashionable in more exalted circles in the fourth century (Brown 1974, 21). Objects which change in the way usually described as 'fashion' are thought to have social as well as symbolic associations. Polhemus (1978, 13) associates the appearance of fashion with social mobility - imitations by those at the bottom of the social scale prompt redefinition of acceptable style at the top. Similarly Bourdieu (1984) shows that there is no such thing as natural 'good taste'; fashion - in this case 'aesthetics' - is used to signal membership of a particular and exclusive social group.

Military status seems to have been desirable in the fourth century almost as social status - kudos attaches to an attachment with the army even if you are not actually a soldier - the new elite come from the army and uniformed officials are the norm (Brown 1971, 27-8). In fact the actual definition of who is military exactly has become extremely blurred. High status civilians have honorary military status, much as today the royal family in Britain, for example, enjoy nominal military rank. Crossbows are therefore also markers also of social status and any variation must be analysed in these terms as well.

Turning to the other items of dress under consideration, beads, bracelets and belt sets, the first two are part of everyday costume which was well established by the fourth century across the area of study, from Pannonia to Britannia. The distinctive styles of objects worn are 'Roman' (without Celtic antecedents) in most cases. Beads and bracelets are gender specific items and the styles known do not alter much chronologically during the fourth century. Some items are age/sexual status markers (bracelets in Pannonia - see Swift 1994). Others could have ritual functions (temple deposits, for example Wheeler and Wheeler [1932] or Woodward and Leach [1993]) though most suppositions of this kind are speculative and difficult to substantiate. Any ritual function is in any case probably marginal compared to their other role. Polhemus (1978, 12) gives definitions of dress functioning in two different ways, as fashion, and as traditional costume. The former is said to be universal, over very large, in some cases world-wide, culturally homogenous zones, and changes rapidly through time. The latter is described as slow to change chronologically but with more spatial variation in different localities. Dress in the late Roman Empire seems to conform to neither of these models. On the one hand quite a homogenous culture is seen, with common preferences for, for example, the 'Gallic coat', the same hairstyle, strip bracelets, cable bracelets, necklaces of small translucent glass beads, sewn leather shoes, double sided bone combs, etc. However fourth century dress preferences do not seem to have the rapid change through time that we might expect from fashion, except perhaps crossbow brooches with a developing typological sequence through the fourth century. In fact, dress seems to freeze in one particular costume and hairstyle across much of the Empire (Wild 1985, 369, 374; Walker 1995, 97-8) though the apparent uniformity of costume could merely be caused by the



constraints of the archaeological record; for example, Wild notes that it is impossible to say whether the Gallic coat continued to be worn after about 320 A.D. as this is when the monuments showing it ceased to be made (Wild 1985, 413). Any innovations in the fourth century which might be described as 'fashionable' are linked to 'Germanic' influence (for example, the opaque beads with a wavy trail discussed above, trousers, etc.) which is interesting in respect of the comments Chapman makes about traditional dress which becomes frozen in time (see above). It might be suspected that once 'Germanic' dress permeates the Empire, it ceases to be an 'ethnic' marker - objects of 'Germanic' origin are commonly worn by provincial Romans without them taking on Germanic costume wholesale, and might be signifying other, status related concerns.

Any regional variation within the common culture may not be a distinctive enough feature for it to be described as a local costume, but must be accounted for in some way. Traditional dress has been viewed as a marker to distinguish ethnic and cultural groups, though it can also be appropriated for other purposes. It is possible that regionality in items like beads, bracelets and buckles could function as a marker of this kind, but within a wider framework of conformity in dress through the provincial Roman Empire which must itself be explained. It seems to be the case that 'native' costumes worn before the conquest, which lingered on in some areas until the second century (Wild 1985, 412) had died out by the fourth century. Regional groupings of objects at a very local level, with variation within one province, occur in some object types - pins, brooches, rings - in the earlier Empire (Cool 1992 on pins in southern Britain, Legros pers. comm. on brooches in Picardy). Why does a style get so far and no further when other categories of material culture may not respect these boundaries? Jones (1997, 116) thinks that there is persuasive evidence from anthropological studies of one or a few particular aspects of culture becoming specifically associated with identity. The accepted culture/status (which has its roots in the changes effected by the Roman conquest, even if the wearers may not consider themselves to be 'Roman') may be on some level questioned or redefined by the presence of regional preferences. The stranger in your midst can immediately be labelled as such, instead of/as well as recognised as part of a common culture. Shanks and Tilley (1987, 96) stress the importance of material culture as a means of communication in a pre-literate society; differences in dress must take on an especial weight in such circumstances. Whether such cultural distinctions work on a level of 'ethnicity' is more problematic. The so called 'laeti' and 'foederati' (terms given to Roman-recognised settlements of barbarians within the Empire) graves in Northern France and Belgium (e.g. Furfooz, Nenquin 1953) are so difficult to explain because they show a blurring of identity and are typical neither of Germanic custom beyond the frontier nor that seen in a large late Roman cemetery. The male graves possess 'Roman' objects such as belt sets whereas the female graves have brooches which have a definite association with the Germanic homelands and are worn in a dress style (one on either shoulder to pin a tunic, see Böhme 1974, Abb. 53) which is not generally found within the Empire. These people may be more convincingly described as 'Germanic' than those whose dress merely reflects the fashionability of certain Germanic style elements of costume like the wavy trail beads; however the associated males have taken on more obviously 'Roman', or at least 'military' dress. Interestingly enough, Eicher

and Simberg (1995, 302) looking at modern ethnographic evidence conclude that women seem to wear traditional or ethnic dress for longer than men, perhaps because men become drawn into a larger sphere through work away from the home village - which one might assume was the case here also, if the men were recruits into the Roman army. It could however also be a result of constraints of identity placed on women which apply less often to men, a frequent feature of both 'traditional' and supposedly 'modern' societies. Since these cemeteries with mixed 'Germanic' and (military?) 'Roman' features appear to conform to the patterns described by Eicher and Simberg for modern societies, ethnic/traditional signifiers might therefore be expected to be present more strongly in female dress within the provincial Roman population as well. They may be less evident in male dress and perhaps least of all in items which can be shown to be military. Jones (1997) provides a useful summary of current thoughts on ethnicity. It is now accepted as being a largely self-defined category (84) even if this is at a subconscious level (117). It may not be coincident with a discrete spatial area (104) but neither may regional style zones - areas of overlap and blurring will occur. Shennan (1989) discusses the problem of ethnic identity and concludes that inevitably there develops a self-conscious use of culture as a marker, in which case, the quickest way to assimilate is to change your culture, not your gene pool, as long as it is only appearance that matters. 'Ethnicity' can still be used as a term, but only when the emphasis is on self-identity at the moment of expression in which it is seen rather than cultural or biological origin. Interaction does not necessarily result in homogenisation of culture (Hodder 1982, 85, Jones 1997), nor is the opposite always true, that there will be a sharp negative reaction of stronger differentiation. If regional differences are present and people change, or choose not to do so, when they move into an area this only reinforces that there is something to conform to, or rebel against, an expression of identity which is significant in some way. What is happening at the boundary between one style preference and another? Why do boundaries occur where they do? Cultural preferences will tend to have a self-perpetuating effect - Bourdieu (1977) discusses this in terms of the 'habitus', the 'active presence of past experience' which will tend towards continuity as the future will seem self-evident and therefore present choices are self-perpetuating (166, 169). Ehrich (1961), discussing the whole of European prehistory and history, draws attention to the persistent reappearance of the same geographical areas as bounded cultural zones irrespective of the particular political landscape (255). Ehrich sees the explanation in terms of physical geography. Mental landscape (Sackett 1990, 39, for example, refers to a 'stylistic genotype'), formed or not by physical barriers, may be just as valid a way of describing it.

In such a way 'traditional' dress may not be a choice, but an awareness of 'difference' from neighbouring groups may be maintained by a more or less conscious expression of disparate style. Cultural habits may change as people make choices at a conscious or subconscious level to reject or affiliate themselves with a particular group. These choices may or may not be affected by the wider social world. Homogeneity of material culture in the Roman period may be produced from the top down (state control) or the bottom up (individual choices coincide; the option to be different is not even perceived). If material culture of the fourth century varies regionally, it may be that such culture is functioning to redefine group identity on a smaller



scale; albeit within a larger (unconscious?) acceptance of 'Roman' culture. Elements of 'traditional' costume may have come to signify things quite different from their original message; as may objects originally worn as part of a uniform of precise symbolic meaning. From the archaeological evidence, and from theoretical studies, it becomes clear that meanings are constantly undergoing a process of definition and redefinition and analysis must proceed on a precise, specific level in order to tease out the possible interweaving and overlapping of different processes which affect the material. The models discussed will be useful in suggesting how variability in the objects under consideration is affected by social, political and cultural concerns.

## CHAPTER 2: CROSSBOW BROOCHES

Important early compilations of material are by Van Buchem (1941) (for the Netherlands, mainly Nijmegen) and Patek (1942) (for Hungary). Heurgon (1958) considers the brooch as a mark of rank and summarises very late gold brooches. Keller (1971) is the definitive work. He reviews previous attempts at seriation of crossbow brooches which resulted in their division between the first and second half of the fourth century (30). His own typology, using well-dated examples from grave contexts, has become standard in subsequent catalogues. He concentrates on chronology, and since his sample comes almost entirely from Pannonia, the problems of any regional variation do not arise. There is a clear chronological progression in all the distinguishing features of the crossbow brooch. Knobs change from round or oval to faceted and/or onion shaped. Early brooches have a long bow and a short foot; later brooches have a foot longer than the bow. Decoration of the foot becomes more complex as several distinct types of pattern develop; Keller uses these to distinguish subtypes within his main groupings. He shows that decoration becomes more elaborate over time, for example the number of circle pairs adorning the foot increases from type 2 to type 4 (Keller 1971, 43). Late crossbow brooches are made from gilded sheet bronze rather than being solid cast. He suggests that the different materials used (gold, silver, gilded copper alloy, copper alloy) mark social differentiation among the wearers (27).

Jobst (1975) cataloguing the brooches from Lauriacum, Austria, uses Keller's typology but says that a typology based on spatially restricted material will have limited validity. He shows this by comparing Keller's typology with that of Van Buchem (based on material from the Netherlands) and predicts a widening of the typology as more forms are discovered (92). Jobst also discusses at length the representation of crossbow brooches in Roman art, and stresses the status of crossbow brooches as military insignia, using evidence from both archaeology and art (93). He suggests that the cessation of the manufacture of crossbow brooches and of the Western Roman Empire were more or less simultaneous. Clarke (1979, 257) suggests that regional variants existed, a conclusion drawn from his difficulties in placing the material from Lankhills, Winchester, unambiguously within Keller's typology. He thinks that the atypical features of the brooches from Lankhills might indicate a British origin, and suggests that type 6 brooches have a regional bias towards the more Westerly provinces. Riha (1979) discusses the crossbow brooches from Augst, describing them by Keller's typology, though this is found to be imperfect. She says that from the degree of standardisation exhibited, crossbow brooches must have been manufactured in a large production centre, perhaps in connection with military arms (171).

Pröttel (1988, 347) says that due to an increase in numbers of crossbow brooches extant Keller's typology must be re-examined and updated. He makes the point that dated examples should be taken from the whole of the Empire (348). He emphasises the value for dating of the so-called '*Kaiserfibeln*', brooches with an inscription on the side of the tetrarchal ruling name. Pröttel retains much of Keller's established typology but makes some significant changes.



TYPOLOGY

Criteria for Keller's and Pröttel's types are given in table A (using Clarke 1979 translation of Keller typology). The relationships between Keller's and Pröttel's types and associated problems arising are discussed below. There are some brooches which show a degree of hybridisation between the different types. Pröttel notices this, for example, he states that some type 2 brooches have features of types 3/4 like onion knobs and a foot longer than the bow (Pröttel 1988, 361). These hybrids map the development of one type into another through chronological time, showing that the typological sequence developed organically and there was no decision at a set time to change from making type 2 to making a completely new type 3/4, for example. Most, such as 3/4 variants with one or two lingering earlier features, can still be recognisably placed in the type with which they share the largest number of stylistic features. Others are more distinctive, and prompt some revision of Pröttel's types (given in table B). Context dates for my collected data, where available, do not conflict with dates suggested by Pröttel.

table A

|            | <b>Keller    Type 1</b>  | <b>Pröttel    Type 1</b>  |
|------------|--|---|
| knobs      | unfaceted, longer than wide  | usually longer than wide, spherical, egg-shaped, cone or pinecone shaped, some faceted          |
| crossarm   | hexagonal cross-section, usually undecorated (1A) sometimes with additions near the bow (1B) | hexagonal or octagonal cross-section, undecorated (1A) or decorated (1B)                        |
| foot       | shorter than the bow with linear decoration  | shorter than the bow, long rectangle with geometric decoration                                  |
| other      |  | predominantly in bronze<br>variation with disc replacing central knob known                     |
| chronology | c.290-320 A.D.<br><b>Keller    Type 2</b>  | c.280-320 A.D.<br><b>Pröttel    Type 2</b>  |
| knob       | faceted, usually longer than wide  | faceted and unfaceted, a variety of shapes - pinecone, mushroom shaped, often longer than broad |
| crossarm   | hexagonal, with decoration   | hexagonal   |
| bow        | narrow   | new type 2D with pronounced cuff at base of bow   |

|            |   |  |
|------------|---|--|
| foot       | shorter than the bow, with linear (2A) simple circle (2B) or involuted decoration (2C)                              | rectangular or tapered, shorter than the bow as a rule, but sometimes the same length or longer, with geometric (2A) linear and circle (2B) or double involutions (2C) |
| other      |   | often gold or gilt bronze, especially type 2C, which frequently also has niello decoration   |
| chronology | c.310-50 A.D.   | 2A, 2B and 2C c. 300-340 A.D.<br>2D c.335-365 A.D.   |
|            | <b>Keller Types 3 and 4</b>   | <b>Pröttel Type 3/4</b>  |
| knobs      | onion shaped, unfaceted   | onion shaped, broader than long  |
| crossarm   | rectangular or trapezoid cross-section, hexagonal in type 4B  | long rectangular or trapezoid cross-section, hexagonal in type 3/4 C and 3/4 D   |
| bow        | thin in cross-section, in type 3 narrower than the foot, in type 4 'nearly as wide as the foot'                     | shorter than the foot and frequently narrower than it  |
| foot       | longer than the bow, with linear (3A ) dot and circle (3B,4A) involuted (3C, 4B) or cut out trapeze (4C) decoration | longer than the bow, with geometric (3/4A) dot and circle (3/4B) involuted (3/4C) or trapeze (3/4 D) decoration  |
| chronology | type 3 c. 340-60 A.D.<br>type 4 c. 350-80 A.D.  | type 3/4A c. 325-355 A.D.<br>type 3/4B c. 350-410 A.D.<br>type 3/4C and D c. 330-410 A.D.  |
|            | <b>Keller Type 5</b>  | <b>Pröttel Type 5</b>  |
| knobs      | round and onion shaped  | usually onion shaped, seldom faceted   |
| crossarm   | hexagonal in cross-section  | hexagonal in cross-section   |
| bow        | wide, with niello inlay   | short  |
| foot       | wide, bow and foot equal width, niello inlay and involuted decoration   | foot equal to or shorter than the bow, involuted decoration  |
| other      | squat in appearance   | gilt sheet bronze or gold  |
| chronology | c.370-400 A.D.  | c.350-415 A.D.   |
|            | <b>Keller Type 6</b>  | <b>Pröttel Type 6</b>  |
| knobs      | Faceted   | nearly always faceted  |
| crossarm   | Hexagonal   | Hexagonal  |
| bow        | long and narrow, not squat, usually without inlaid decoration   | short, hollow, horseshoe shaped, always shorter than the foot  |



|            |   |   |
|------------|---|---|
| foot       | long and narrow, involuted openwork ornament, separately cast and attached, usually without inlaid decoration | openwork involuted decoration   |
| other      | includes those separated into type 7 by Pröttel   |   |
| chronology | c.400 A.D. ->   | c.390-460 A.D.<br><b>Pröttel Type 7</b> , with characteristic openwork tubular foot |
| chronology |   | 460-500 A.D.  |

#### Type 1 and 2 (figs. 1-4)

Keller's types 1 and 2 are principally distinguished from one another by the shape of the knobs. Types 2B and 2C have new decoration styles not found on crossbow brooches of type 1. At first, Pröttel's specified criteria for types 1 and 2 seem unclear. Types 2B and 2C can still be separated from type 1 by their circle or involuted decoration, but to see how the overall form differs and how brooches with geometric decoration may be confidently placed in type 2 it is necessary to closely examine the examples given in Abb. 2 and 3. At the other end of the spectrum some type 2 brooches are stated to have a foot longer than the bow or onion shaped knobs (Pröttel 1988, 353). These features are more readily associated with type 3/4. Again the form is important to distinguish these brooches. Pröttel divides type 2 brooches into 2A, geometric foot decoration, 2B, with circle decoration, 2C, involuted decoration and 2D, pronounced cuff at the base of the bow. There are some differences in form which correspond in part to the different decorative styles. Type 2D, for example, usually has a long bow and short tapered foot, with a wide cross-arm. Type 2B and 2C often have round faceted knobs, a thin bow and a longer rectangular foot. However, decorative style does not correlate perfectly with form. It is important to subdivide type 2 since variation within the type is so wide, but more useful to base this on the overall form, i.e. the proportions of the bow, cross-arm and foot. Modified criteria for type 2 are given in the table below (table B).

Keller's dating of type 1 brooches, and of type 2A, 2B and 2C, is basically unaltered by Pröttel's inclusion of more grave contexts. Pröttel's revision of accepted characteristics for types 1 and 2 may well explain his earlier date for the first occurrence of brooches of type 2. Type 2D, not isolated by Keller, is thought to continue until at least 365 A.D. Pröttel cites datable grave examples from Bregenz and Tongeren at around the mid-century and Oudenburg c.400 A.D. (Pröttel 1988, 357). These could merely be quite old pieces by the time they came to be deposited in graves, but Pröttel foresees this query and supports his proposed dating most convincingly by citing a brooch of type 2D with an inscription of the Emperor Julian, which therefore must have been made during his reign, 355-363 A.D. (357).

### Types 3 and 4 (figs. 5-6)

It is a common consensus that Keller types 3 and 4 are often indistinguishable, since the only difference between them is in the relative width of the bow, often difficult to assess. Pröttel therefore collapses the two types together, and his subsequent subtypes can be related back to the Keller subtypes fairly easily, even though they appear confusing at first.

Keller 3A equivalent to Pröttel 3/4 A

Keller 3B and 4A equivalent to Pröttel 3/4 B

Keller 3C and 4B equivalent to Pröttel 3/4 C

Keller 4C equivalent to Pröttel 3/4 D

Pröttel gives a firm division between types 3/4 A and B, trapezoid cross-section, and types 3/4 C and D, hexagonal cross-arm cross-section. However, variations do exist with type A or B foot decoration and hexagonal cross-arm or type C or D decoration and rectangular/trapezoid cross-arm. Type 3/4 brooches also occasionally retain features more characteristic of early brooches, see above. The dating of type 3/4 is extended considerably by Pröttel on two counts. He firstly says that Keller's terminal date must be called into question by the end of issue of Pannonian coins in 375-80 A.D., a problem recognised by Keller himself. Secondly, he cites numerous coin dated graves from the last third of the fourth century (362).

### Types 5 and 6 (figs. 7-10)

Type 5 remains unchanged by Pröttel. Keller and Pröttel use different criteria to distinguish type 6. Both agree that type 6 has faceted knobs and involuted openwork decoration. However, Keller says that the type has a long and narrow bow and foot, while Pröttel says that the bow is always shorter than the foot and sometimes horseshoe shaped. With the collection of new data both type 5 and type 6 must be re-examined. Some brooches have onion shaped knobs, but otherwise conform to type 6 criteria. A large number of brooches do not fit at all within the criteria specified, and are significantly different in appearance from the types 5 and 6 illustrated in Keller's original typology. These brooches have neither openwork decoration on the foot nor a narrow face to the bow, both diagnostic of type 6. They do not have the niello decoration characteristic for type 5, and many have a long foot which also excludes them from type 5. New subtypes are given in the table below, with 5i and 6ii respectively representing slightly modified criteria for the types established by Keller and Pröttel, and 5ii and 6i being new subtypes.

Pröttel pushes the dating of type 5 back to a starting date of 350 A.D., by examining in more detail crossbow brooches of types 3/4 and 5 which have been found in graves at Sagvar associated with belt-fittings (366). He shows that brooches of type 5 and of types 3/4 occur in graves with the same types of belt-fitting, and are therefore likely to be contemporary; and, from the stylistic date of the belt fittings, type 5 must occur earlier than previously thought. Based on his knowledge of British coin-dated finds, Mackreth (1983) also says that the date range for this type should begin at around 350 A.D. (fiche BO5). Examining the chronological differences for type 6, Keller dates the type to post 400 A.D. Pröttel says that a revision by Clarke (1979) of a date of 370-400 A.D. can be discounted, since type 6 brooches, with visible openwork involuted



decoration on the foot, are illustrated on, for example, an early sixth century wall fresco in the catacombs of San Gennaro (Abb. 9). While he accepts that their continuation into the sixth century is doubtful (the painting could be a copy of an earlier picture) he does suggest that such a portrayal means that it is less likely that crossbow brooches of type 6 ceased at the end of the fourth century (370). Pröttel also defines a new type, type 7, with rectangular *opus interrasile* foot, previously included by Keller within type 6. The most well known example of this type is that in Childeric's grave at Tournai, dated to 481-2 A.D. from coins and known date of death. This type of decoration is also known on other fifth century objects such as gold bracelets, e.g. Buckton ed. (1994, 52). Pröttel also mentions the existence of some fifth century examples intermediate between types 6 and 7 (370).

table B

REVISION OF PRÖTTEL TYPOLOGY

|          |  |
|----------|--|
|          | <b>Type 2i</b>   |
| knobs    | Round, cone shaped or faceted  |
| crossarm | Rectangular or trapezoid cross-section with added decoration                       |
| bow      | Not narrow   |
| foot     | Equal to, or more usually longer, than the bow. Rectangular, not tapered.          |
| other    |  |
|          | <b>Type 2ii</b>  |
| knobs    | Most frequently faceted, may be round or pinecone shaped                           |
| crossarm | Thin, with rectangular or trapezoid cross-section with added decoration            |
| bow      | Narrow   |
| foot     | Rectangular, usually longer than the bow   |
| other    | Often gilded   |
|          | <b>Type 2iii</b>   |
| knobs    | Faceted, round or pinecone shaped  |
| crossarm | Wide, hexagonal cross-section  |
| bow      | Narrow   |
| foot     | Tapered  |
| other    | Often has pronounced cuff at base of bow (Pröttel type 2D), knobs sometimes hollow |
|          | <b>Type 5i</b>   |
| knobs    | Onion shaped   |
| crossarm | Hexagonal with added decoration  |
| bow      | Short, wide and squat  |
| foot     | May be short or longer with involuted decoration                                   |
| other    | Hollow, with characteristic niello decoration                                      |

### **Type 5ii**

|          |                                 |
|----------|---------------------------------|
| knobs    | Onion shaped                    |
| crossarm | Hexagonal with added decoration |
| bow      | Short, wide and squat           |
| foot     | Short with trapeze decoration   |
| other    | No niello decoration            |

**Type 6i** (since this brooch has common features with type 5 the dating is probably slightly earlier than Pröttel's dating for type 6)

|          |   |
|----------|---|
| knobs    | Onion shaped, or more rarely faceted                              |
| crossarm | hexagonal with added decoration                                   |
| bow      | wide front face, relatively long                                  |
| foot     | foot very long with trapeze or involuted decoration, not openwork |
| other    | mostly without niello or only simple one-motif pattern            |

### **Type 6ii**

|          |  |
|----------|--|
| knobs    | most often faceted, occasionally onion shaped          |
| crossarm | hexagonal with added decoration                        |
| bow      | thin, with only very narrow flat strip at front of bow |
| foot     | openwork involuted decoration                          |
| other    | mostly without niello                                  |

## **TYPOLOGICAL DEVELOPMENT**

Though Keller's scheme, type 1 through 6 chronologically, broadly remains valid, Pröttel (1988) suggests that the development from one type to another was not as straightforward as Keller's 1->2->3->4->5->6. Since there now seems to be a considerable overlap of types present within any one period, there is scope for a much more complicated evolution. Crossbow brooches are seen to evolve along two main paths, those with a wide crossarm and those with a narrow crossarm. At first all crossbow brooches have a wide, round or hexagonal crossarm. Pröttel suggests that brooches with a rectangular or trapezoid sectioned crossarm are an evolutionary dead end (Abb.10), and that, since his type 2C and 2D have been given an extended dating range, it is more likely that type 5, pushed earlier in date (see table A), developed direct from type 2C. The example of type 5 which is illustrated by Pröttel to show its similarity with a type 2 brooch (Abb. 7) is one of those examples which has atypical features such as a relatively long foot and an absence of niello decoration which I have reclassified as type 6i. Brooches of this type can be seen to have a clear association with some type 2i and 2iii brooches, especially since some type 2iii brooches have hollow knobs (Odiham, fig. 4 for example), and can therefore be seen to be edging towards production in sheet bronze instead of being solid cast. Type 2ii, with thin bow and rectangular foot, therefore develop into type 3/4: good intermediate examples being brooches from Budapest (Aquincum) (Tópal 1993, pl. 171 1/4 and gr. 138/5), and Augst (Riha 1979, Taf.



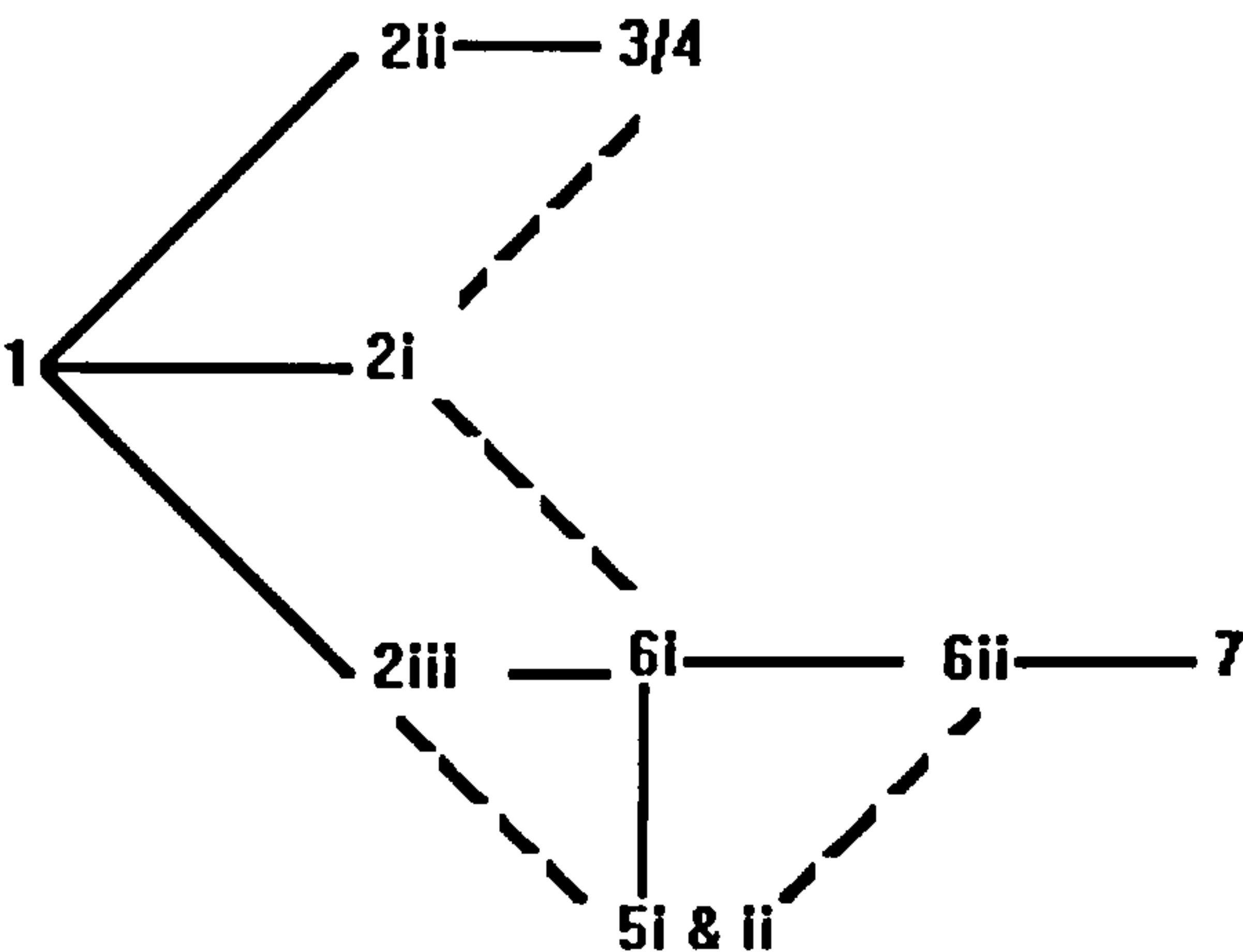


fig. 11

ANALYSIS

1083 crossbow brooches were collected from sites within the study area. Sites where crossbow brooches were found are shown in fig. 12, and range from find-spots of single brooches to large cemeteries. A scatter of outliers was also noted, about another 50 brooches, but these are not mapped. Sites are varied in nature ranging from isolated finds of individual objects to large fully excavated late Roman cemeteries. Numbers of crossbows from each site are shown in fig. 13, against a background of all the sites from which material was collected. All sites in Pannonia have large numbers of brooches, with other significant concentrations at major sites such as Augst, Lauriacum (Enns), Trier, Nijmegen, Oudenburg and Richborough. Crossbow brooches have a definite bias to military sites. Hadrian's Wall and the many brooches found on sites along the limes are the clearest example of this. The larger land units of the later Roman Empire - Britannia, Belgica, Lugdunensis, Germania, Sequania, Raetia, Noricum, Pannonia - rather than the smaller provinces such as Savaria, Germania Inferior, etc. are used to group the brooches (and material in the other chapters) by geographical area, mainly because this gives more workable units, and because there is some doubt as to where the exact boundaries of the late provinces lie (divisions within Britain, for example, are still debated). How the sites with crossbow brooches fall within these land units is shown in fig. 14. Brooches occur in the following materials: gold (8), silver (15), gilt copper alloy (127), copper alloy (875), unspecified (58). Distribution of materials is shown in figs. 15-16. A feature of note is the distribution of gold brooches, though the numbers are small so it is difficult to be certain that this reflects a pattern in antiquity, especially since gold is more likely to be recycled than other materials. Several are found concentrated around Trier, the capital of the Western Roman Empire in this period and the sometime residence of the Emperor, with one also at Tournai from Childeric's grave (King of the Franks in the fifth century). The other four examples all come from western Britain. Another example in the British Isles, but outside the Roman province, would be the type 6 example from the Moray Firth in Scotland (Curle 1932, fig. 36 4). A further gold brooch beyond the frontiers is that found at Lengerich in Germany (Drescher 1959, Abb. 3). There is a clear shift in the materials used to make the different types. Type 1 and

2 occur in copper alloy, silver and gold. Type 3/4 and 5 occur in copper alloy and gilded copper alloy. Type 6 occur in gilt copper alloy and gold.

Numbers collected from each area are as follows:

|             |     |
|-------------|-----|
| Britannia   | 108 |
| Belgica     | 173 |
| Lugdunensis | 35  |
| Germania    | 179 |
| Sequania    | 92  |
| Raetia      | 128 |
| Noricum     | 117 |
| Pannonia    | 251 |

A low number from Lugdunensis probably mainly reflects the difficulty of data collection for this area as mentioned in chapter 1. It has however been noted by Galliou (1989, 56) and Didier Paillard pers. comm., that crossbows are very rare finds further west in France. Because of the small number from this area, any further results for Lugdunensis must be treated with caution. In contrast, numbers for Pannonia are extremely high. This could be a result of more recently excavated and well published late Roman cemeteries. Patek (1942), however, studying brooch types in Hungary, counted more than 800 in museum collections, and was working well before the publication of the excavations used by me. It is therefore possible that the large numbers of brooches from Pannonia are a direct reflection of larger numbers in this province in antiquity. When studying the distributions it is important to remember that the number found in Pannonia is more than double that for most other provinces. However, this skew is corrected by removing the type 3/4 brooches in Pannonia from the count, since 70% of the sample are type 3/4. Therefore the distribution maps will only show a bias to Pannonia when decorative styles associated with type 3/4 brooches are analysed. The fact that the skew is purely in type 3/4 also makes it more likely that large numbers in Pannonia are not accidental.

Firstly an over view of the type distribution in each province will be given, followed by a study of spatial variability in each type considering the decorative details of the brooch. Patek's compilation (Patek 1942) only illustrates a few brooches completely, and hence his data could not be included in my analysis. Many of Patek's catalogued brooches are also unprovenanced finds from museum collections. Details of bow and foot decoration are given for several hundred which are from provenanced sites, however, and these will be referred to where possible to check results for Pannonia.



## PERCENTAGE OF TYPES IN EACH PROVINCE

Percentages of each different brooch type occurring in each provincial group are shown in fig. 17 and fig. 18. Provinces are shown roughly west to east, with Britannia top left and Pannonia bottom right. Similar trends are shown in each province, with remarkably similar proportions of the different types.

The most noticeable feature is a large increase in the numbers of type 3/4, tailing off to quite small numbers of types 5 and 6. Type 7 has not been included as only one brooch of this type occurs within the study area, at Tournai as above (see fig. 91). Britannia is seen to be noticeably different to the other provinces, with a greater proportion of type 1 brooches and a correspondingly much smaller percentage of type 3/4. Lugdunensis, Belgica and Germania all show increasing numbers of type 2 brooches relative to type 1, with type 3/4 increasing further to about 50% of the sample. Sequania, Raetia, Noricum and Pannonia all have fewer type 2 than type 1, but higher and higher proportions of type 3/4 are seen moving further east, with about 70% of Pannonian brooches being type 3/4 as already mentioned. Types 5 and 6 are poorly represented in the Danubian provinces, with the largest numbers of these types in the west in Lugdunensis and Britannia, and a significant percentage in Sequania. A number of incomplete brooches (made of gilded sheet copper alloy, diagnostic for types 5 and 6) not included in the statistics as given because they could not be specifically identified as type 5, type 6, would reinforce this westerly bias (see fig. 85).

## SPATIAL VARIABILITY

Possible features for analysis are shown in fig. 19. There are two main limitations to the analysis. Firstly, more unusual decorative patterns will not generally be present in large enough quantities to be confident about regional patterning, and therefore there will be a necessary concentration on the most popular decorative styles. Secondly, where combined features of the brooches are studied, this will reduce the numbers to quite small groups which are best treated as an indication of a possible trend rather than a definite exposition of it. The most in-depth work will be on type 3/4 which occurs in by far the largest quantities and is also by far the most uniform. Line and facet patterns will not be much discussed. They were made by engraving lines and bevels, not using a stamp or casting the pattern in a mould, and are therefore much more variable than circle and dot or involuted decoration. Also, because I am working from drawings for a large number of brooches, and the conventions used for illustration vary quite widely, they will be less reliably portrayed than other types of decoration - in a drawing, a circle stamp will be less ambiguous than lines to represent a geometric pattern which may be misleadingly schematised.

Numbers of brooches with the specified features at each site will be shown on distribution maps. Features will be discussed roughly in typological progression, though it must be remembered that there is considerable overlap in the timespan of production for some types. The particular feature discussed is shown on the map and additional figures give examples of these

features on brooches. Most features are quite precisely described and only patterns which are very similar will be included.

#### TYPE 1 (fig. 1)

Distributed throughout the study area (fig. 20), and particularly well represented in the Danubian provinces. Concentrations of finds exist along the frontier line of the upper Danube and the Rhine and Hadrian's Wall is also defined.

#### Type 1 knob shape and base moulding (fig. 21)

Early brooches are quite variable in knob shape. One brooch may have three differently shaped knobs, though more often it is just the central knob which differs. Sometimes one or more knobs are missing. Type 1 brooches most commonly have either egg-shaped or cone-shaped knobs or a combination of the two. Frequently the left and right knob are egg-shaped and the central knob is more cone-shaped, though these forms segue into one another and the knob is sometimes different in profile to its appearance in full face. The distribution of type 1 brooches with egg-shaped and/or cone-shaped knobs is shown in fig. 22. Large numbers are found along the upper Danube and in Pannonia, and they are also quite well represented on the upper Rhine. Egg and cone-shaped knobs commonly occur with a double cuff to the base of the knob, and the association is very strong in Raetia, Noricum and Pannonia.

Faceted knobs on type 1 brooches are usually also elongated and are obviously related to egg-shaped knobs. The distribution is wider, with many in the Danubian provinces and also getting further away from the limes in north-east Gaul. Because of the smaller numbers brooches with one, two or three faceted knobs are shown (the others being a different shape or missing) (fig. 23) as well as those with all three (fig. 24). Faceted knobs with a double cuff base also show the same bias to the Danubian provinces. The example from Caerleon is clearly anomalous (see fig. 21) and most of the brooches from Richborough also have crude irregular faceting dissimilar from that on most type 1 brooches.

#### Type 1 foot decoration

Type 1 brooches always have geometric decoration, and a wide range of different patterns occur. Most of these are found on only a few brooches, and are not easily distinguished from one another. A10 foot decoration (fig. 1 top right and bottom left) is one of the few suitable for analysis, as it is both frequently occurring and distinctive. It is obviously restricted to the Danube area (fig. 25) especially on the frontier line itself, the road between Augsburg and Kempten being particularly noticeable. There are some outliers in the north east.

#### Type 1 bow decoration

Most type 1 brooches have no decoration on the bow. The only frequently occurring pattern is a2 downward pointing triangles (those with d1 decoration have a row of triangles struck through with a vertical line. It is sometimes difficult to distinguish the two, since if the triangles are touching this



will give the same effect, so both are included here, though type 1 brooches are more likely than the other types to be unambiguously a2; see fig. 26). This decoration is restricted to brooches in Pannonia and the southern part of Raetia (fig. 27) This supports Toth's work on type 1 brooches further to the east (Gugl 1995, 43) which suggests this decorative motif originates in southern Pannonia.

#### TYPE 2 (figs. 2-4)

Type 2i is not particularly common (fig. 28), rare in Pannonia, and there is only a single example in Britannia. Type 2ii is widely distributed (fig. 29). 2iii shows a bias to the more westerly provinces, (fig. 30) notably not occurring in Pannonia, but with several in southern Britain, and significant groups on the lower Rhine, at Nijmegen and Krefeld-Gellep.

#### Type 2 knob shape

Type 2 brooches have a variety of knob shapes. Brooches with 3 cone-shaped knobs occur in types 2i and 2iii only, and the cone shape is now slightly different from that seen on type 1 brooches. It is flatter and wider (fig. 31). Distribution is restricted to west of the Rhine, with some well away from the frontiers, apart from one example at Regensburg (fig. 32). Brooches of type 2ii are most likely to have rounded faceted knobs (fig. 3). Some are still elongated as on type 1 brooches but there is a definite tendency towards a more spherical shape. This knob shape is widely distributed (fig. 33) as might be expected from the distribution of type 2ii brooches with many in Belgica and Lugdunensis away from the limes. There are only two in Britain at Elton, Lincs., and Caister-by-Yarmouth. A particularly distinctive type of faceted knob (facet 7, fig. 31) associated with brooches of type 2iii is confined to the west (fig. 34).

#### Type 2 bow base moulding

Brooches of type 2 sometimes have a pronounced cuff at the base of the bow (Pröttel's type 2d) - this is particularly likely in type 2iii. Some examples are shown in figs. 4 and 31. There is one example from Katwyk which seems to belong to type 3/4a, also shown on the map. They are mostly found in Germania Inferior and Belgica (fig. 35). The elaborate example from Pröttel is cited as being in the Wien museum, not useful for provenance. Behrens (1919, 10) gives the find spot for this brooch as Siebenburgen. This place name could not be located in gazetteers of Austria and Germany, but the find is most likely to be from Austria, which would give one brooch in Noricum/Pannonia I. It is notable that no other examples occur in Pannonia. The distribution of a particular triangular shaped cuff with nicks along two edges (bow base 9, fig. 31 bottom left) is shown in fig. 36, which has a strong bias to the west.

#### Type 2 foot decoration

Brooches with geometric decoration often occur with a10 foot pattern (fig. 3 brooches from Neuburg and Chartres), as previously seen for type 1 brooches. A10 has a much wider distribution than was the case for type 1 brooches (fig. 37), noticeably along the military road

behind the Danube frontier. Circle decoration appears for the first time on type 2 brooches, most often foot pattern b17 with geometric decoration plus a simple circle pair at the top of the foot (fig. 38). This foot decoration on type 2 is found along the Danube close to the frontier, with others further west (see fig. 39). Involute decoration also makes its first appearance on type 2 brooches. The distribution of those with foot decoration c5 (fig. 2 top right, fig. 3 top left) is shown in fig. 40. Most brooches occur on sites in the Danube provinces.

#### Type 2 bow decoration

As with type 1, a2/d1 bow decoration (fig. 38 top left) is the most frequently occurring pattern, now more widely distributed (fig. 41), mainly on sites in the Danubian provinces set back from the frontier, and in Germania and Belgica, again not on the frontier line itself. There are a couple in south-eastern Britannia (London and Caister-by-Yarmouth).

#### TYPE 3/4 (fig. 42)

Type 3/4 occur across all regions, both on the limes and scattered throughout each province.

#### Type 3/4 foot decoration

##### 1. Geometric decoration (3/4a)

Foot decoration a10 is also found on type 3/4 brooches (fig. 5 top left) in a similar distribution to that for type 2 brooches, along the Rhine and the Danube (fig. 43). However it only occurs in this sample in the extreme east of Pannonia I.

##### 2. Circle and dot decoration (3/4b)

Circle and dot stamped decoration is found on the majority of type 3/4 brooches and has a particular grammar. Circle stamps occur in pairs at the top and bottom of the foot (fig. 48). Keller (1971, 43) examines circle and dot pairs and concludes that circle and dot stamps increase in numbers (through time) from type 2->3->4. Numbers of pairs at the top and the bottom may be equal, e.g. b5, two circle pairs at each end (fig. 38 top left) or increasing at the foot, e.g. b2 (fig. 5) and b4 (fig. 38). Some brooches have circle stamps the whole length of the foot (b7, fig. 55 top left). Distributions of the most frequently occurring patterns are given in figs. 44-47. The three most popular, b2, b4 and b5, are extremely common and widespread through the study area, though b2 is restricted to the extreme east in Britannia and b5 is not found in Britannia at all. B4 occurs on some type 2 brooches as well, shown on the map. B7 foot decoration is distributed mainly in Pannonia and down the Rhine in Germania with some also occurring in Britannia. Proportions of each foot pattern occurring in each region were examined (fig. 49). B2 is the most frequently occurring pattern in all regions. Nearly half of the brooches in Pannonia, Raetia, and Noricum with circle and dot stamps have b2 decoration. Sequania has just over half, with declining proportions in the other areas. B4 and B5 also occur almost everywhere in high proportions, such that over three quarters of all the brooches with circle and dot decoration in the Danube provinces fall into just three types, B2, B4 and B5. In Lugdunensis and Britannia



proportions are more evenly split with a range of different decorative patterns. Results could be checked by examining the different foot patterns occurring in Patek (1942) for Pannonia. These give the same results as my sample for Pannonia (see fig. 18). Variability was calculated by dividing the number of different foot patterns occurring in each region by the total number of brooches with circle and dot stamps in that region. If every single brooch were different, the number attained would be 1, and if all the brooches were the same, the number would be 0. The results are plotted on a graph (see fig. 18). Regions roughly from west to east are along the x axis. Britannia and Lugdunensis have the smallest numbers of 3/4b brooches but the most variation. Belgica, Germania, Sequania, Raetia, Noricum and Lugdunensis are all very close with much less variability. Brooches in Pannonia are extremely uniform though they occur in very large numbers. Variability in Patek's sample for Pannonia was also very small (0.04), though more circle and dot foot patterns illustrated by Patek are given than actually cited in the text for provenanced finds and hence used in these calculations.

A minority of brooches in the Rhenish and north-western provinces have odd circle and dot patterns (b16, b19, b28, b8 - see fig. 50), some of which occur on only one or two brooches. They do not follow the conventions of the style grammar. B16 and b8 have a central line of stamps, b19 six stamps in a flower pattern and b28 two pairs of stamps at the bottom of the foot and one pair at the top. Find spots are shown in fig. 51. Patek (1942, 272) cites one example with b28 foot decoration (see also Patek 1942, Abb. XXX 10).

### 3. Involute decoration (3/4c)

Most frequently occurring patterns are c1 (fig. 6 top left) and c5 (fig. 6 top right) which both have a widespread distribution (figs. 52-3).

### 4. Trapeze decoration (3/4d)

The only pattern which occurs in large numbers is d2 (fig. 6 below) which has a widespread distribution (fig. 54).

### Type 3/4 bow decoration

The following bow decorations do sometimes occur on one or two type 1 or 2 brooches but are primarily found on brooches of type 3/4, except a2/d1 discussed above. The bow decoration often continues in a line along the foot also. There are an extremely large number of different bow decorations in the sample, some only differing by small details such as the design having a border or arrow designs pointing one way or another. However it was found that, in order to separate out spatial patterns in the data, it was useful to make distinctions of this kind. Each bow decoration discussed is therefore very precise and all examples plotted are exactly the same in terms of motif, orientation of motif, and presence or not of a border of vertical lines. Problems distinguishing a2 from d1 have already been mentioned and these are plotted together. Decorative bow patterns which occur on 9 or more brooches were examined in detail and spatial distribution plotted. The only pattern present in these quantities not included is j2, with a deep

groove down the centre of the brooch, which on some brooches may once have contained a different pattern in niello decoration, and cannot be assumed to be deliberate.

In order to examine distribution mechanisms more closely, where possible the association of bow and foot patterns was examined. Only a very few brooches generally had the same bow and foot decoration, often only one or two, but some of the combinations occurred more frequently, and these are shown on distribution maps.

**A2 bow decoration:** downward pointing triangles and d1 triangles or chevrons struck through with a vertical line (fig. 55 top left)

Type 3/4 brooches with a2/d1 bow decoration are widely distributed (fig. 56), again more widely than type 1 and 2 brooches with the same decoration. They are now found along the frontier line itself in all the limes provinces. Only two occur in Britannia in this sample.

**C1 bow decoration:** horizontal lines within a vertical border (fig. 55 top right)

C1 bow decoration on type 3/4 brooches in this sample occurs in Germania along the Rhine and scattered in most other places (fig. 57). There are no finds in Britannia. Patek (1942, 272-5, Abb. XXIX, i, j) describes 26 brooches with definite provenance within Pannonia with this type of bow decoration.

**D0 bow decoration:** horizontal lines struck through with a central vertical line (fig. 55 bottom right)

D0 bow decoration is found in three main clusters in Pannonia, Sequania and Germania (fig. 58). It does not occur in Belgica and Lugdunensis and only once in Britannia. This bow decoration is very similar to d1 foot decoration and may be a badly executed version of this in some cases. This bow decoration must therefore also be considered together with a2/d1. D0 and d1/a2 considered together show a distribution along the whole of the limes as well as in other areas (fig. 59).

**D2 bow decoration:** v motif pointing downwards (no border) fig. 55 bottom left

A sparse distribution with most brooches in the north east (fig. 60). 60 brooches are described in Patek (1942) with this decoration from Pannonia, (268-70, Abb. XXIX c, noting that Patek's illustrations are all upside down, as it has been a convention to publish crossbow brooches the wrong way up).

**E1 bow decoration:** Slanted lines from right to left (////) without a border (fig. 61 top left)

E1 bow decoration is found in the Danube provinces and in Sequania with a single example in Lugdunensis at Chartres (fig. 62).

**E6 bow decoration:** slanted lines from left to right (\\\\\\) within a border of vertical lines (fig. 61 bottom left)

E6 bow decoration follows the line of the fortified road behind the frontier on the upper Danube



with an outlier on the lower Rhine at Nijmegen (fig. 63). Most are found to have b2 foot decoration also (fig. 61 bottom left) and brooches with e6 bow decoration and b2 foot decoration indeed define this line very clearly (fig. 64). Those from Lauriacum, Salzburg-Klessheim, Totis and Nijmegen also have identical ribbed mouldings at the base of the knobs and the base of the bow (see fig. 61 bottom left showing the Lauriacum brooch) confirming that the Nijmegen brooch was made in the same place as these others. Patek (1942, 275) cites 12 brooches with e6 decoration with definite provenance within Pannonia, four of them also having b2 foot decoration, from Carnuntum, Intercisa, Mitrovica and Rábapordány. (E6 decoration is illustrated in Patek 1942 Abb. XXIX k.)

E9 bow decoration: slanted lines from right to left (////) within a border of vertical lines (fig. 61 top right)

Not found along the Rhine or in Britannia (fig. 65). Scattered finds occur in the Danubian provinces and there is a cluster in Sequania. Two brooch fragments from Lauriacum, not typed and therefore not mapped, also have this bow decoration, as well as the three definitely of type 3/4 shown on the map.

#### E1, E6 and E9 bow decoration

These three patterns are clearly related and sometimes brooches will have one of these decorations on the bow and another on the foot (the bow decoration is prioritised here). If considered together the main distribution along the hook of the Rhine in Sequania and the whole of the Danube is clear (fig. 66).

I1 bow decoration: circle motif superimposed on slanted line from right to left (///) without a border (fig. 67 bottom left)

Widely distributed (fig. 68), though less common towards the East. No brooches occur in Britannia or Noricum. Brooches with i1 bow decoration and b2 foot decoration have a similarly wide distribution (fig. 69).

I5 bow decoration: circle motif superimposed on slanted line from left to right (\\) within a border of vertical lines (fig. 67 top left)

Found in Germania and Trier in Belgica but not further to the west or in Britannia. They also occur in Pannonia (fig. 70). Many of these brooches also have b2 foot decoration (fig. 71). Patek cites 12 brooches with this bow decoration from Pannonia (see Patek 1942, 271-2, Abb. XXIX g), 5 of which have b2 foot decoration, from Budapest, Com.Tolna, Intercisa and Savaria.

I9 bow decoration: circle motif superimposed on slanted line from right to left (///) within a border of vertical lines (fig. 67 bottom right)

A similar distribution in Germania, Sequania and Pannonia (fig. 72). No examples in Noricum and Lugdunensis, and one in Belgica at Trier. One is found in the south east in Britannia. Many of

these brooches also have b2 foot decoration (fig. 73).

#### I1, I5 and I9 bow decoration

These three decorative patterns are related and sometimes more than one appears on a single brooch as for e type bow decoration. If they are all considered together clustering along the Rhine and in Pannonia becomes more pronounced (fig. 74).

J1 bow decoration: two vertical lines forming a border (fig. 67 top right)

Again occurring primarily in Germania and Pannonia (fig. 75).

#### IDENTICAL BROOCHES

Crossbow brooches are always described as being extremely standardised so it is perhaps suprising that in actual fact it is quite difficult to find brooches identical in every respect. Brooches of type 3/4 which have the same bow decoration, foot decoration, knob base moulding and bow base moulding do not occur in sufficient numbers for any distribution map to be useful. Closely similar brooches with these four features the same are found very far apart. For example, brooches with i9 bow decoration, b2 foot decoration, and ribbed moulding to the base of the knobs and the bow are found at Stowting in Kent, Britannia (Brailsford 1951, fig. 10 29); Sagvar (Burger 1966, gr. 101 1) and Pécs (Fulep 1977, gr. R308), in Pannonia; and Altenstadt (Keller 1971, Taf. 35 2), in Raetia. Other closely similar pairs also occur at different sites: Intercisa and Neuburg (a4 bow decoration, b2 foot, knob base 7, bow base 3; shown in fig. 76), and Sagvar and Tokod (a4 bow decoration, b2 foot, ribbed moulding to knob and bow base; also shown in fig. 76), for example.

#### TYPE 5

Type 5i has a fairly widespread distribution (fig. 77), though greater numbers occur in the west. Type 5ii with no niello decoration and short foot is found almost exclusively to the north west in a very small area (fig. 78) with examples in Britannia and on the channel coast. The single example from Pannonia is questionable as fabric covers areas which might have niello decoration, though the foot does not appear to have such decoration. It is interesting that there are very few type 5 brooches along the Danube frontier line, and in Britannia they are found in the south-east.

#### Type 5 bow decoration

Elaborate inlaid niello patterns with multiple motifs and sometimes with portrait medallions invariably occur in type 5i brooches (see fig. 7). Brooches with this decoration are extremely widespread (fig. 79). Only one of the individual designs occurs on more than a single brooch in this sample with all the others being unique. The two brooches with an identical pattern (m8, see fig. 80) are found at opposite ends of the study area - Bonn on the lower Rhine and Bataszek Kved in Pannonia - and are discussed by Engemann and Rüger eds.(1991, 192). They have a



segmented pattern of repeating motifs (Engemann and Rüger eds.1991 Abb. 128, Abb. 132). Although the motif itself is different, there is a clear stylistic link with a brooch from Colchester (British Museum 70.4.2.25) which also has a segmented pattern of repeating motifs (m11, see fig. 80). Incidentally there is also an unprovenanced example (therefore not included in the database) in the Römisch-Germanisches Museum, Köln (84,360) with a related design, m20 (see fig. 80). Each bow pattern on the other brooches is made up of a number of motifs (some are shown in fig. 80) with sometimes the same motifs being combined in a different pattern from one brooch to another. Individual motifs making up each pattern are similarly widespread, with, for example, portrait medallions occurring on brooches at St. Brice Chartres, Lauriacum, Dunapentele, Windisch, Köln, Sagvar, Marteville, Moosberg bei Murnau, and ?Mainz (doubtful provenance). Brooches from Bregenz, and Hungary (more precise provenance unknown, in RGZM collection), have no motifs in common with any other brooches. Most of the other brooches share one or more motifs in common. By looking at how the motifs link together (fig. 81-2), all these brooches can ultimately be associated with one another - the brooch from Sagvar gr. 114 1 has motifs a, c, f and h, for example, which also occur together or separately on 13 other brooches, which in turn share new motifs with some other brooches, and so on. Motifs which occur together on brooches are shown below.

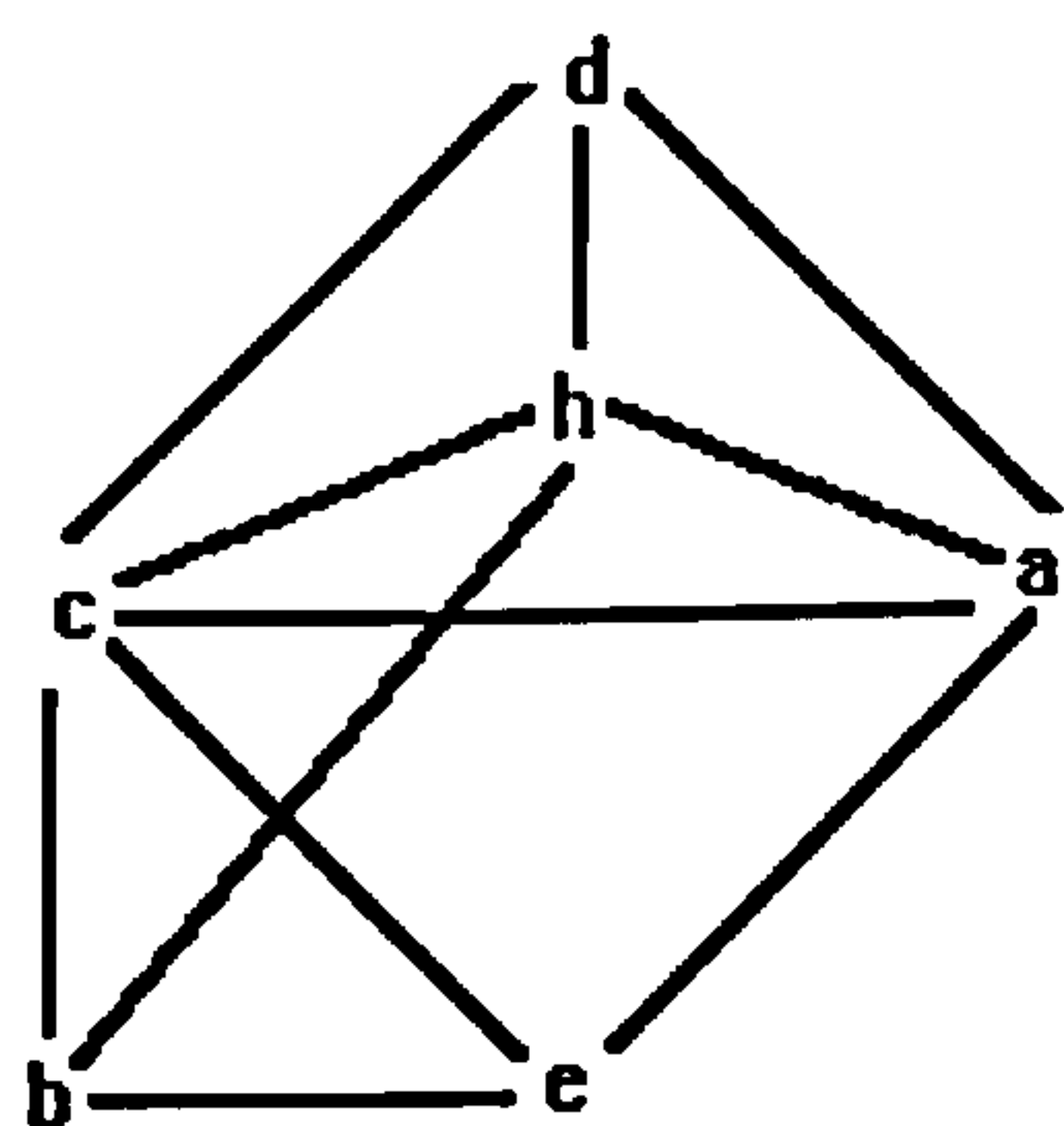


fig. 82

## TYPE 6

Type 6i occurs most frequently at a single site, Augst in Sequania, with other examples biased toward the west (fig. 83). Type 6ii is again much more widely distributed in the west, but a few examples are seen in Pannonia (fig. 84). Type 6 brooches show an interesting shift in distribution away from the frontiers, following on from the tendencies noticed in type 5 brooches. The Rhine frontier is now also almost abandoned. Type 6ii are arguably the latest of all, c.390-460 A.D. (most typological connection with type 7), and in Britain have retreated to the extreme south east, while they drift more to Belgica and Lugdunensis on the Continent. Examples of types 5-6 which could not be further categorised also show a bias to the west, as already noted (fig. 85).

### Filigree trim (e.g. fig. 10 bottom right)

A cluster on the lower Rhine, three in Pannonia and two at Windisch (fig. 86) - a distribution which reinforces the long distances which sometimes occurs between type 5 brooches with the same features.

### Type 5 and 6 foot decoration

By far the majority of type 5 and 6 brooches have involuted decoration along the foot and the most popular motifs, c1 (e.g. figs. 7 and 8), c4 (fig. 10) and c5 (fig. 9 bottom left), are widespread (figs. 87-89). D2 foot decoration occurs on a few brooches and is clearly related to involuted decoration (Pröttel 1988 Abb. 5 ). Patek cites five provenanced brooches with c4 foot decoration which are all found on sites in Pannonia I, shown in fig. 90; one further brooch has a find spot of 'Pannonia' generally (Patek 1942, 264, Abb. XXX 17).

## DISCUSSION

It is apparent from the distributions that crossbow brooches were not all produced in Pannonia as has been previously suggested, though a large number undoubtedly were. Types were produced in a number of different places, and, for some of those which were produced in a particular area, transfer over long distances certainly occurred.

At the beginning of the fourth century crossbow brooches are already established as a primarily military object throughout the study area, as they are widespread on sites from Pannonia to Britain, especially along the frontier line. It seems plausible from the evidence presented that type 1 brooches were made in a number of different places, since there is considerable variation in knob shape and geometric decoration. Type 1 brooches with egg-shaped/cone-shaped knobs and double cuff base, and those with faceted egg-shaped knobs and double cuff base, have a restricted distribution to the Danube area. Using the criteria specified in chapter one, it can be said that these brooches have correspondence in small detail as well as overall appearance; therefore they are likely to have been produced by one workshop, situated in the Danube area. Brooches without the double cuff base, but with egg-shaped or egg-shaped faceted knobs are also perhaps more likely to have been produced on the Danube than elsewhere, especially those with other decorative features biased to this region, such as a10 foot decoration. The high proportion of type 1 brooches found in Raetia might indicate that this was the main production area for these types; type 1 brooches with a2/d1 bow decoration may have been produced even more to the south-east. Only a very few type 1 brooches exist in the sample with a large number of the same features, but where these do exist, the spatial restriction is noticeable; type 1 brooches with at least two egg-shaped knobs, double cuff base to the knobs, and a10 foot decoration are found at Pfaffenhofen (Taf. 18 1) Wessling (Taf. 7 12) and München (Taf. 27 1) (all Keller 1971) from Raetia, and Pecs (Fulep 1977, R293) from Pannonia. Brooches with other knob shapes are not consistent enough in shape and have too widespread a distribution to be confident about production areas, and other features of the brooches are too variable and occur in too small a number to be useful for analysis; the variability itself may however be an indication that the brooches were produced in more than one place. From the percentages found in Britain (fig. 17), and the idiosyncratic appearance of some British brooches (e.g. Caerleon, fig. 21) it might be suspected that some type 1 brooches are being produced in Britain.



Type 2 brooches fall into three different types with a number of associated features. Type 2iii brooches may have been produced and distributed west of the Rhine, as most are found here, particularly on the lower Rhine at Nijmegen and Krefeld-Gellep. They often have other regional features such as the pronounced cuff at the base of the bow or facet 7 type knobs. These three features associating together on brooches at Krefeld-Gellep (see fig. 31 bottom left) and Trier (Cüppers et al 1984, inv. 5366 156a) show that the more features type 2iii brooches have in common, the more restricted the distribution, which is persuasive of workshop/s producing and distributing fairly locally. A one-off movement from somewhere else could of course easily lead to a few identical brooches turning up in the same area, but when such brooches also share common features with other brooches in the area which are themselves spatially restricted, as here, this is probably not the case. Brooches of type 2i and 2iii with cone-shaped knobs, found west of the Rhine, are supportive evidence for type 2iii and perhaps 2i brooches being produced here. The fact that the greatest proportions of type 2 brooches are found in Belgica, Germania, and/or Lugdunensis is also persuasive. Type 2ii is found throughout the study area, as are common features of type 2ii such as faceted knobs and a10 foot decoration. Most of the bow decorations discussed for type 3/4 brooches occur occasionally on type 2ii brooches. There are also some correlations in foot decoration, for example b4 foot occurs on type 2ii. This suggests that there are links between the two types, possibly with respect to production areas, especially since type 3/4 is distributed over the same area as type 2ii.

Close examination of the bow and foot decoration on type 3/4 brooches and their spatial distribution is revealing. The presence of the same foot patterns in each province, and the same proportions of the most popular circle and dot foot stamps in all provinces except Lugdunensis and Britannia, suggest that supply to all except these provinces was uniform, and in all likelihood from the same source: production and distribution on a large scale. Regional groups which do exist, and most of the identical pairs which crop up, are mostly in the Danube area. Bow (e.g. j1) and foot patterns which seem to favour distribution along the Rhine are always undermined by an invariable presence in Pannonia, no doubt biased because greater numbers are found here, but nevertheless requiring explanation. Not only do more brooches of type 3/4 come from here than anywhere else, but these brooches are extremely uniform, with variability for those with circle and dot stamps at about 0.05 (0.06 for my sample, 0.04 for Patek's) that is to say, every 100 brooches with circle and dot decoration throws up only 5 different foot patterns, whereas in Britannia every 100 brooches would give 50 different foot patterns. All these factors taken together suggest that it is extremely likely that brooches of type 3/4 with commonly occurring foot patterns - b2, b4 and b5 - and probably many other brooches of type 3/4, were produced in Pannonia either in one place or under close control in more than one place, and exported to the various provinces. Variability in Lugdunensis and Britannia, and the presence of odd brooches which do not follow the conventions of the style grammar, suggest that some type 3/4 brooches at least were produced by other workshops perhaps more local to these areas. Therefore it cannot be assumed that every type 3/4 brooch found originated in Pannonia. There is a dearth of type 3/4 brooches in Britannia generally, and brooches of the standard type certainly do not reach Britain in any great



numbers, with only four with b2 foot decoration in this sample, all on sites in eastern Britain: two from East Anglia and one each from Richborough and Stowting in Kent.

Distribution of type 3/4 brooches with specific patterns on the bow, and those with the same pattern on the bow and foot, are very interesting. Several characteristic distributions occur repeatedly. These are: 1) along the whole of the limes (c1?, d0 and d1/a2, reinforced by the brooches with this bow decoration and also with b4 foot decoration); 2) along the Danube only (e1, e6, especially those with b2 foot, e9); 3) in the Danube area, and also more westerly in Belgica and Lugdunensis and not found in the Rhine frontier zone, (a2/d1 on type 2); 4) biased to the Rhine frontier area and sites in Pannonia (i5 and i9, especially also with b2 foot; j1). Of those brooches which occur in the Danube area, e6 (especially with b2 foot) lie in the same line set back from the Danube, following the fortified military road behind the frontier (see Garbsch 1988, Beilage 1) which stretches from Basel to Lauriacum (type 5i brooches and 3/4 brooches with b7 foot decoration also seem to follow this line, see figs. 47 and 77, and a2/d1 bow decoration on type 1 is set back from the frontier line in Noricum and Raetia). Crossbow brooches of types 2 and 3/4 are rather more frequent finds on sites along the limes than further away from the frontiers, which could be an explanation for the patterns exhibited, but type 2 and 3/4 also occur on plenty of sites not on the limes (see fig. 42).

The repeated occurrence of the same spatial groupings, not all at the same sites each time, and their correlation with features such as the road behind the limes, confirms that they are not merely the accidental products of a random distribution. Consideration of the way long-lived decorative patterns change in distribution through time may add helpfully to the picture before interpretation is attempted.

#### Movement of a 10 foot decoration

Occurs on type 1 (the earliest type) along the Danube frontier as far as Vohburg and then down the fortified road towards Bregenz. Type 2ii brooches (with a later date range, see table A) occur instead back from the frontier on the road between Aquincum and Kempten with a concentration in the heavily fortified area between the Rhine and Danube frontiers. They are now much more widely distributed up the Rhine and in Belgica and Lugdunensis. In type 3/4 (date range later still, see table A) this type of foot decoration is present both on the frontier and behind it along the Danube and continues to have a distribution down the Rhine also.

#### Movement of a2/d1 bow decoration

In type 1 (early fourth century, see table A) there is a very easterly distribution but as this bow decoration continues to be used on type 2 (with a later date range) the distribution moves upwards and is seen along the fortified road between Aquincum (Budapest) and Irrsdorf (one example in Raetia is an arbitrary point in 'Schwaben' and should not be taken as exact) as well as further west. Its absence on the Raetian frontier line and on the Rhine is noticeable. On type 3/4 brooches (which progress chronologically from type 2, see table A) this type of bow decoration moves to the frontier line itself on the Danube and is found both on and off the limes west of the



Rhine. Related D0 bow decoration has a similar distribution.

#### Movement of c5 foot decoration

First seen in type 2i and 2ii when it is distributed along the Danube and across Belgica and Lugdunensis, the distribution on type 3/4 brooches (with a later date range, see table A) is similar but has now moved up the Rhine as well and is found on a couple of sites in Britain.

Firstly, the patterns confirm that production and distribution of type 3/4 brooches was controlled and that long distances were involved. Brooches with a distribution in Pannonia and on the Rhine, with a gap in the provinces on the upper Danube, show that it is not merely a case of the usual distribution fall-off curve as distance from the likely production area increases. Since all the evidence already points to a Pannonian production zone for most 3/4 brooches it might be concluded that all the distribution patterns for bow and foot decoration are a result of brooches being exported from Pannonia to a particular area. Some are sent to the upper Danube, some to the Rhine frontier, some to both areas. The brooches might travel with the army sent to these places (showing troop movement) or they might be exported in one consignment (showing trading patterns). Since survival is probably only a fraction of the actual numbers present in antiquity it is impossible to say which distribution mechanism is more likely. The phenomenon of different brooch bow and foot patterns having different distributions could be produced in several ways. Brooches with exactly the same bow and foot pattern will certainly be very close to one another in date. It is significant that the most precise distribution, for e6 bow decoration, is of those brooches which are most similar - 4 being identical in every respect (see above) - and therefore closest chronologically. The most obvious explanation for the patterns exhibited above is that they represent snapshots of brooch distribution at one particular moment - that particular consignment of brooches/soldiers at that time was sent to x places along the military road which needed new brooches/men - just set up? Just re-occupied? New officers or troops arriving? This would agree with current evidence which suggests that a number of fortified settlements in the Danube frontier area were constructed at the same time by the same groups of soldiers (Garbsch 1988, 106). It also seems more likely than a deliberate distinction of areas by decorative pattern. D1/a2 bow decoration is found along the whole of the limes, for example, perhaps unlikely if the intention were to distinguish between the Rhine and Danube provinces. Also, patterns which can be followed through time do not consistently appear in the same areas. A10 foot decoration moves on and off the frontier line from types 1-> 2->3/4; a2/d1 bow decoration has an increasingly widespread distribution over time and also moves from the military road to the frontier line itself on the Danube. Though at first it has one of the more precise distributions, by type 2, c.300-365 A.D., brooches are appearing in three areas very distant from one another - on the Danube, in Gaul and even in Britain. Some of the brooches outside the main clusters will be accounted for by troops being sent on, or retiring, to a different area which conforms with distributions tending to spread out and be less regional as time goes on. The fact that the most noticeably restricted distributions are along the limes could be because the limes troops were more static (recruited



locally and likely to stay in the area) than the field armies (see chapter one) and therefore patterns of original distribution have been less disrupted.

Certainly brooches with the same bow and foot pattern at different sites confirm that these sites were occupied more or less contemporaneously (since types do not have an extended lifespan, and most brooches come from grave contexts) and that considerable military activity can be attested there at this date since to produce the distributions shown, given the likely loss/recycling of material, a very large number of brooches with that pattern must originally have been present in that particular area. Unfortunately none of the bow patterns and bow and foot combinations can be placed in a relative chronological sequence as archaeological dating is rather too imprecise to distinguish the time spans of only a few years probably involved.

Type 5i, as stated above, does not occur on the Danube frontier line itself but back from it, a pattern seen before in some type 3/4 brooches. However on sites on the lower Rhine it is found close to the frontier, though also further west in Belgica and Lugdunensis. Type 5ii appears to have been produced and distributed in a small area around the north east coast of Gaul, and, as it also has no niello decoration, was perhaps produced by a different workshop to that producing type 5i brooches with their wide distribution. The occurrence of identical foot patterns on brooches at opposite ends of the study area, which are also exactly similar in all other respects (Batászek-Kved and Bonn, see above) and the linking of motifs across brooches which sets most of them together in one stylistic group, encourage the supposition that this group of brooches of type 5i at least were produced in one workshop (which has already been argued from the complex nature of the niello decoration by some, see chapter 1) and exported over long distances. By the time type 6 is in use (390-460A.D.), it is likely that production is now being carried out in some area in the west, with both 6i and 6ii having a western bias (figs. 83-4). Of Patek's sample (Patek 1942), only 6 out of 505 provenanced brooches with bow and foot detail given have c4 foot decoration which is particularly associated with brooches of type 6. Putting all the data together for type 6 brooches, 6i, 6ii and Patek's information, 11 are found in Pannonia, 2 further examples occur in the upper Danube area and 34 are found in provinces west of the Rhine.

Type 6i brooches are related typologically to type 5ii, definitely produced in the west. If Pröttel's supposition is correct, that late sheet metal crossbows developed out of type 2, (most similar to type 2iii), then it all ties together rather nicely, since type 2iii has a likely western production area (above, 53). In addition, Pröttel's type 2D, which overlaps considerably with my type 2iii, is stated to be the latest chronologically, in production to c.365 A.D. (Pröttel 1988, 357, and above, 35). Another piece of supporting evidence for the long life-span suggested by Pröttel for type 2 and the development of type 6 from type 2 is the very odd gold brooch found at Erickstanbrae near Hadrian's Wall (fig. 91). This brooch has a tapered foot and pronounced cuff to the base of the bow, generally seen on type 2iii. The bow base cuff is similar to type 2 brooches from Augst and Odiham. However, the brooch from Erickstanbrae also has a pointed bow characteristic of type 6ii and, suggestive of a very late date, opus interrasile decoration along the side of the bow, a decorative style which is associated with type 7 crossbows well into the fifth century and with fourth and fifth century gold bracelets (see chapter one).



The noticeable shift of type 6 brooches away from the Rhine and Danube frontiers (nor do any occur in this sample on Hadrian's Wall) has already been noted. Type 6ii brooches have a more westerly distribution than any other type and Lugdunensis has the highest percentage of type 6 brooches (fig. 17). All Patek's brooches with c4 foot decoration (characteristically type 6) are found towards the western part of Pannonia at Carnuntum, Au am Leithabirge, and not on the lower Danube (fig. 90). Either type 6 are not military any more, or the military on the frontiers are not wearing them any more, or there are no longer troops on the frontiers, or more than one of these factors is contributing. Raetia and Noricum were hardly still Roman provinces by this date, which probably accounts for the lack of brooches here, although allegedly neither was Britain with a conventional end date of 410 A.D., and type 6 brooches are still found here, though in the extreme south-east and not on the frontier it is true. Stilicho, head of the army in the West at this time (Jones 1964, 182) wears a type 6 brooch and he is definitely military. However he is also equally definitely high status, and type 6 brooches are almost always (on some examples gilding may have been lost) gilt or gold (for example Moray Firth, Curle 1932, fig. 34 6) i.e. high status materials. They also occur in much reduced numbers which suggests that they are more restricted than previously (and if Stilicho is wearing one, he is not going to want everyone in the army to be doing the same). It might be concluded that their symbolic status has changed slightly; they are showing military/civilian officer activity only away from the frontiers. Since earlier frontier activity was accompanied by the presence of high status as well as bronze standard issue crossbows on the frontier (for example silver crossbows, which material is only used for brooches of types 1 or 2, and type 5 high status gilt- niello inlaid brooches, are both present on the lower Rhine), type 6 movement away from the frontiers might still be taken as an indication of a general abandonment or lessening of activity in the frontier zones by 390-460 A.D. The shift away from all the frontier areas would correlate with a late concentration of defences around towns rather than the frontier which had been breached many times by the last decades of the fourth century (Johnson 1983, 194). Interestingly enough, gold crossbows of type 6 do travel beyond the frontiers, for example the Moray Firth and Erickstanbrae brooches, and another example from Lengerich in Germany (Drescher 1959, Abb. 3). It may be speculated that the economic value (purely the gold content) or perhaps also the prestige value of these brooches was high outside the Empire.

## CASE STUDY: BROOCHES FOUND IN BRITANNIA WITH, METAL ANALYSIS

Bayley (1992) carried out composition analysis of a number of brooches found in Britain. It may be useful to consider those in my database which were used for her analysis. Firstly, stylistic features will be examined for these brooches and suggestions made as to their possible production area. Secondly, the metal analyses will be examined to see if there is any concurrence between stylistic features/production area and composition.

Of the brooches analysed by Bayley, some were too early, 3rd cent so called 'light' crossbows, also called *p-brooches*. Of the remainder, some were unprovenanced and therefore not used by me, and some were from museum collections to which I had not had access. Those from Richborough and Caister-by-Yarmouth of fourth century type were examined in detail. They are illustrated in figs. 92-96.

### STYLISTIC ANALYSIS

Richborough 7350478 (fig. 92) has one egg-shaped knob and one round knob remaining. The round knob has a double cuff at the base. Similarly, Richborough 7351206 (fig. 92) has one egg-shaped knob and each knob has a double cuff at the base. The presence of both of these features together suggests that both may have originated on the Danube. Caister-by-Yarmouth 980 (fig. 93) is of type 2ii with rounded faceted knobs, a2 bow decoration and b15 foot decoration. Faceted knobs on type 2ii only occur in Britain on one other brooch from Elton, Lincs., and are found predominantly in Belgica and widespread on Continental sites (see fig. 33). The foot decoration is found on another brooch in Britain, on Hadrian's Wall at Corbridge (Snape 1993, fig.10 84), and at Tongeren (Vanvinckenroye 1984 pl. 65 99) in Germania and Evreux (Dollfus 1973, 558) in Lugdunensis. Patek's collection from Pannonia has four brooches probably with this foot decoration, though the illustration is rather ambiguous (see Patek 1942 Abb. XXX 14). A2/D1 bow decoration occurs on three other brooches in Britain, a type 3/4b brooch from Caerwent, museum acc. No.D2, a type 3/4c brooch from the river Thames (British Museum 86.3.23.1) and a type 2iii brooch from London (Museum of London 84.451) and on many Continental sites, mostly in the Danube provinces. It is probable that this brooch was not made in Britain.

Caister-by-Yarmouth 1039 (fig. 94) is a typical type 3/4 brooch with one of the most popular foot patterns, b4. This pattern only occurs on one other brooch in the sample from Britain, found at London (Museum of London 15083). It is extremely widespread and popular on the Continent (fig. 45). The example here is simple circle rather than circle and dot but this is not unusual. The notched wire decoration down the bow is not common but does occur on three type 3/4 brooches from Pannonia, Pécs grave R260 (Fulep 1977), Sagvar grave 270 2 (Burger 1966), and Keszthely grave 4 (Sagi 1981). The knob base pattern of slanted lines and the bow base, a simple small cuff, are also common features of this type of brooch. It is probable that this brooch was produced in Pannonia.

Richborough 7351700 (fig. 94) and 7350697 (fig. 94) are identical (though the latter has a missing foot). They are typical type 3/4 brooches with slightly unusual zig-zag bow decoration



(paralleled at a single other site, Augst in Sequania [Riha 1979, Taf. 53 1464]). 7351700 has b2 foot decoration, occurring on only 3 other brooches in Britain - in East Anglia, and at Stowting in Kent, and, as seen above, on about 70% of type 3/4b in Pannonia. I am confident that these brooches were not produced in Britain - they probably come from Pannonia.

Richborough 7351227 (fig. 93) is of type 6ii and therefore is most likely to have been manufactured in the west.

Richborough 7350097 (fig. 95) and Richborough 7350273 (fig. 92) have one central egg-shaped faceted knob which is a characteristic associated with the Danube area. No other type 1 brooches with any faceted egg-shaped knobs occur in the sample for Britain, though a few have irregular shaped faceted knobs. 7350273 has a double cuff moulding at the base of one knob. It has a bevelled base to the central knob and horizontal rather than vertical facets, not the usual appearance of this type of knob. 7350097 has no double cuff mouldings at the base of the knobs and the other knobs are rounded. These brooches may be from the Danube but they are slightly ambiguous. Caister-by-Yarmouth 3185 (fig. 92) has two egg/cone-shaped knobs. It does not have a double cuff at the base of any knobs. Other brooches with 3 egg-shaped knobs found in Britain occur at Bartomley, a gold example with double cuff base and 3 egg-shaped knobs, therefore almost certainly an import, and Richborough above, also a likely import. Therefore it is possible that the Caister-by-Yarmouth brooch 3185 comes from the Danubian area. Caister-by-Yarmouth 2386 (fig. 94) is a type 3/4 brooch. It has a rectangular foot with b7 decoration, found throughout the study area, though the notches across the end are not standard and a splayed foot would be more characteristic of this type. The knobs are onion shaped though one is flattened. The bow base decoration is of a type commonly found. It is possible that this brooch is a Continental import.

Richborough 7350272 (fig. 95) has two remaining knobs, which widen towards the top and are flattened in side view. One knob has a double cuff moulding. Knobs of this shape are unusual and have only been found at Moosburg bei Murnau (Garbsch 1966 Taf. 25 3) and Nijmegen (Museum Kam 714). Richborough 7351702, 7350052, 7350297, 7350069, 7350500 and 7350275 (figs. 95-6) have irregularly shaped round and conical faceted knobs. 7350275 has an unusual cross on the bow. They do not have any distinctive features which might point to a possible production area.

Richborough 7351707 (fig. 93) is of type 3/4. It has two conical and one onion-shaped knob and the foot decoration is very unusual, and without parallels in this sample. It is not possible to suggest an origin for this brooch due to the unusual foot decoration and a lack of other regional features. Richborough 7350090 is a fragmentary brooch with onion shaped knobs. No decoration is visible. A production area cannot be suggested.

METAL ANALYSIS

Bayley (1992, fig. 10.33, reproduced here as fig. 97) shows metal analysis for the crossbow brooches in a ternary diagram plotting the percentages of zinc, lead and tin in copper alloy brooches. An alloy of copper and predominantly tin will give bronze, whereas an alloy of copper and zinc will give brass. Either may have significant proportions of lead. Presence of zinc and tin in more or less equal proportions results in gunmetal. It can be seen that the brooches fall into two distinct clusters, those which are made of leaded bronze to the top right, the largest cluster, and those which are made of leaded or unleaded brass or gunmetal, a smaller group. There is one outlier with 0% Zn at the far right, brooch Richborough 7350273. From percentages of Cu, Sn, Pb, Zn, Ag given, the smaller group is made up of the following brooches: Caister-by-Yarmouth 980, 1039, and 3185 and Richborough 7351206, 7350697, 7350090, 7350097, 7351700 and 7350618. The latter is too early to fall within this study. The others are all considered above.

Summary of stylistic features and metal analysis (boxed numbers are those in Bayley's brass and gunmetal cluster)

| Likely origin west of the Rhine | No stylistic features associated with a particular area | Possible origin in the Danube area | Almost definite origin in the Danube area |
|---------------------------------|---|------------------------------------|---|
| Richborough 7351227             | Richborough 7350272                                     | Richborough 7350097                | Richborough 7350478                       |
|                                 | Richborough 7351702                                     | Richborough 7350273                | Richborough 7351206                       |
|                                 | Richborough 7350052                                     | Caister 3185                       | Caister 980                               |
|                                 | Richborough 7350297                                     | Caister 2386                       | Caister 1039                              |
|                                 | Richborough 7350069                                     |                                    | Richborough 7351700                       |
|                                 | Richborough 7350500                                     |                                    | Richborough 7350697                       |
|                                 | Richborough 7350275                                     |                                    |   |
|                                 | Richborough 7351707                                     |                                    |   |
|                                 | Richborough 7350090                                     |                                    |   |

All of the brooches which have definite stylistic features associated with the Danube provinces belong to the brass/gunmetal group except 7350478 which falls into the leaded bronze group. Of the brooches which have some features not commonly occurring in Britain, Richborough 7350097 with egg-shaped faceted central knob and Caister-by-Yarmouth 3185 with two egg-shaped knobs also fall into the brass/gunmetal group. Richborough 7350273 with a faceted knob/double cuff base, and Caister-by-Yarmouth 2386, type 3/4 with b7 foot decoration, are bronze - the outlier with no zinc at all - and leaded bronze respectively and fall into the main group. Of the brooches with features which are not associated with a particular area, only the incomplete brooch from Richborough, 7350090, is found to belong to the smaller brass/gunmetal group. The rest of the



brooches fall into the main leaded bronze group. The type 6ii brooch with a probable Western production area also falls into the main leaded bronze group.

Bayley also gives the type of alloy for a number of brooches from London which are present in my database, two each of types 1, 2ii, and 2iii, though specific details of percentage composition are not given and these brooches are not included in the ternary diagram. If brooches not made in Britain are more likely to be brass than bronze, as seems to be the case from the metal analysis, examining the material and stylistic features of these brooches may be useful. The type 1 brooches from London have features present throughout the study area - 438 with round knobs with a single cuff base, 85.108/1 with round and cone shaped knobs and a single cuff at the base. 438 is of leaded gunmetal, 85.108/1 of silver and brass. Both type 2ii brooches, 451(57-59/1) and 458, are of brass, the latter of leaded brass, which from the results above suggests an origin on the Continent, supporting stylistic evidence (fig. 29) which shows type 2ii to be infrequent in Britain. Brooch 451(57-59/1) also has foot decoration b17, the only example in Britain on a type 2 brooch, though it does occur on a type 3/4 brooch at Stowting, Kent (British Museum 1904.6.28.7). This foot decoration is found mostly in the Danube provinces (fig. 39). Of the type 2iii brooches, 85.108/2 is of copper and 84.451 is of silver. These are quite unusual materials, and not especially enlightening.

There is a significant correlation between brooches which have stylistic features which point to production outside Britain, most commonly in the Danubian provinces, and element composition. All the complete (leaded or unleaded) brass or gunmetal brooches have some of these stylistic features. Bayley (1981, 31) notes that earlier Continental brooch imports in the first century are of brass, and asks if brass were always preferred to bronze in Continental workshops (36), a question which may also be asked here. Richborough and Caister-by-Yarmouth, sites on the east coast, are of course likely find spots for Continental material, and the occurrence of more than one brooch with Continental associations at these sites and at sites like London and Stowting in the south east is notable. There is also an unusual late Roman mortarium from Caister-by-Yarmouth which is also thought to have originated in the Danube/ Alpine region - kiln sites in Hungary are known (Arthur and Williams 1978, 394-5). The remainder of the brooches, from the evidence of the metal analysis and from their uncommon or ambiguous stylistic features, may have been produced and distributed in Britain. However, brooch 7350478 from Richborough is cautionary as, although it has stylistic features associated with the Danubian area, its composition is of leaded bronze. Caister-by-Yarmouth 2386 was also surprising; with one of the most popular foot patterns b7, it might have been expected that this brooch would be of brass/gunmetal to follow the trend. These results could indicate that although brass/gunmetal was the favoured material, not all brooches in the Danube area were invariably of this composition, or that these brooches were made elsewhere and merely copied stylistic features associated with brooches from the Danube area. Unfortunately I have been unable to find any metal analysis carried out for Continental finds, which might solve this problem. If the second premise is true, certainly possible given the slight stylistic divergence from expected norms exhibited by both of these brooches, it means that care must be taken when using stylistic



features to denote origin since there may have been some local copying of styles which originally reached the western parts of the study area as imports. The metal analysis of brooches from Richborough, Caister-by-Yarmouth and London does however confirm that brooches with stylistic features associated with production on the Continent are likely to be different in composition from the other brooches occurring in Britain. Where alloy is known, and stylistic features definitive, the brooch can definitely be said to be either a deliberate export to Britain or an object which has travelled to final resting place with its wearer who obtained the brooch elsewhere.

## SUMMARY

Previous generalised suggestions about the production and distribution of crossbow brooches have therefore been validated by a detailed study, though naturally the picture is much more complicated than previously thought. Pröttel's suggested typology and development of types is confirmed, with regional data showing that spatial variability is a decisive factor in the development of crossbows through the fourth century. In all phases (types 1 through 6) there is a mainstream trend, brooches which occur more often and achieve a wider distribution, and smaller divergent groups with a much more restricted distribution. A possible narrative for the crossbow brooch through the fourth century and into the fifth century can now be suggested. Crossbows were apparently produced both in the north western and in the Danubian provinces, with most regional divergence in type 2. Through time type 2ii developed into type 3/4, produced for the most part in Pannonia, which took over and became the dominant type in all areas, thanks to an efficient and long-distance distribution system. Type 2i? and 2iii continued to be produced west of the Rhine gradually showing a typological development into types 5 and 6. Presumably the same workshops producing these types also manufactured some type 3/4 brooches with idiosyncratic features found in the west, and perhaps other closer copies of Danubian brooches. The cessation of production of type 3/4 (at the end of the fourth century/beginning of the fifth century according to Pröttel, above), probably in Pannonia, corresponds with the cessation of military pay in these areas (c.375 A.D. for Pannonia, Mócsy 1974, 343; c.400 A.D. for Noricum, Alföldi 1974, 213) and the collapse of the limes. Meanwhile types 5 and 6i west of the Rhine continue in production and develop by the end of the fourth/early fifth century into type 6ii which has a distribution away from the limes. It has become a marker of high status, and goes on to develop into type 7 which is mostly found only in gold, much further south (Italy, North Africa, etc; see Heurgon 1958) and has become prestigious enough to be buried with the Frankish king Childeric in 482 A.D. (Dumas 1982, no page numbering).



### CHAPTER 3: GLASS BEADS

Guido and Templemann-Maczynska have published monographs on beads, in both cases not primarily Roman beads; Guido examines prehistoric and Romano-British glass beads of Britain and Ireland (Guido 1978) and Templemann-Maczynska (1985) concentrates on areas beyond the frontier, but with some discussion of the late Roman glass industry. Loeschcke (1925) is important as the only evidence for the production of glass beads (see chapter 1). Guido's typology classes beads principally by their shape and size, sometimes distinguishing subtypes by colour or decoration. Important features are listed as being form, perforation, colour, material, decoration, dimensions, translucency and method of manufacture (5), although examining published material these are not often all recorded for each individual bead found on a site. Keller (1971) is also useful, especially for types not found in Britain. Beads are again distinguished principally by form.

Guido (1978) suggests that, given their uniformity in appearance, beads were manufactured in relatively few places. However she does suggest a few regions from which specific types of bead may have come - blue cylinder beads from the Continent or a source in southern Britain, other cylinder beads being rare in Britain (94), small green opaque square sectioned beads from South Bavaria (96), blue long polygonal beads being non-Roman (the implication is Germanic) and therefore not made in Britain (96). Translucent yellow and dark amber coloured beads are suggested to be Germanic imports from the Rhineland. Diamond faceted beads are said to exist in wide variety in Europe, only a single type existing in Britain.

Guido (1978) does emphasise that any such suggestions are speculative rather than being based on concrete data, and says that these will only be validated or disproved by an extensive study of bead types in different areas (39). Keller (1971) gives some parallels for beads found on sites in South Bavaria, but there is no discussion of a specific origin for any type.

There are very few other studies on late Roman glass beads. Inevitably enough specific bead types which have been studied are generally those which are more unusual and/or decorative. Boon (1977) considers gilt-in-glass beads which are found throughout the Roman period, although they are apparently not found anywhere in the Western empire except Britain until the fourth century (97). Analysis of trace elements in beads from Caerleon and Faras (Egypt) shows a close similarity, and hence the beads, frequent finds throughout the Eastern Empire, are suggested to originate from the East. Boon suggests that the distribution of beads represents the travelling of individuals rather than deliberate long-distance trading, since, if beads were traded, a few intermediate between Britain and the East might be expected in the third century (Boon 1966/8, 8). Gilt-in-glass beads apparently gain in popularity in the Migration period, and become common in Europe (Boon 1977, 200). Schulze (1978, 51) draws attention to the potential of glass beads for providing the archaeologist with information about the general continuity of the late Roman glass industry. It is commented that there has been hardly any attempt to plot the chronological and spatial distribution of beads, or to discuss their origin. Four bead types in particular are examined, all variations on a spherical/ring shaped bead in opaque or translucent glass with an ornamental wavy trail in one or more additional colours. Schulze refutes

the generally held opinion that such beads found in early medieval graves are residual. Her type B beads shift in distribution to the Western empire in the early medieval period and the colour combinations change to some extent (53) and types C and D actually increase in numbers known in the migration period (55). Type C is known to have been manufactured at Trier, (excavation of a glass workshop) this is therefore an interesting example of a particular bead type perhaps being produced specifically for export (since greater numbers are found beyond the frontier in the Roman period - see distribution map, Schulze 1978, 54) though of course Trier might not be the only production area.

Schulze (1978) says that the evidence from these glass beads is sufficient to suggest that in the Rhine-Mosel area not only was the memory of techniques of glassmaking undimmed, but that the same types even continued to be produced (55) and the production of such beads in Trier continued until the sixth century. This also correlates with what is known of glass vessel production with direct continuity from the Roman to the post-Roman period (Harden 1971, 80; Evison 1982, 44). The shift in distribution in the migration period, from without the Roman world to within its former reaches, is thought by Schulze to be a result of influence and/or migration of Germanic peoples in the fifth century and later. Koch (1976) discusses the distribution of 'cobalt blue' glass beads in a figure of eight shape with the perforation through the top section (called by her *ösenperlen*, though they are more commonly referred to as *achterformige*). They seem to be found primarily in areas outside Roman jurisdiction in the fourth century. Again, this bead type continued to be worn in the Migration period (73). Koch (1976, 74) also mentions their amuletic function. He suggests the place of production to be north of the Alps.

## DESCRIPTION OF TYPES

Beads have been divided in this analysis primarily by form and colour, following Guido (1978).

Van der Sleen (1973) gives some more precise definitions concerning dimension:

Standard: length equal to diameter

Long: length greater than the diameter

Short: length less than the diameter

Disc: length not more than one third of the diameter

These divisions lend precision to what would otherwise be vague terms, and are used to categorise the beads in my database, though size was found to be relevant for only a few bead types. Cylinder beads with square or round section, made from cutting a glass rod into pieces, occur in many different lengths and these are found to have the same distributions. Biconical beads, however, appear quite different when a short bead is compared with a long bead.

Descriptions of coloured trails on beads again follow Guido (1978). A summary of the bead types (the most frequently occurring) used in the analysis is given in fig. 98.



## SPATIAL ANALYSIS

Details of over 13,000 beads were collected from sites in the study area. Sites or contexts dating to the fourth or fifth century only were used, except for a few bead types which could be stylistically dated to this period. Sites in the different provincial areas are shown in fig. 99 and approximate numbers of beads at each site are shown in fig.100. Numbers of beads could not, however, be used in the analysis, for two main reasons. Firstly, not all site reports give exact numbers of the different forms and colours. Secondly, since the find of just one necklace might contain 200 or more beads, numbers will actually be fairly meaningless for distribution; the number of different sites at which the bead type is found will be more significant. Therefore the distribution maps which follow give presence or absence of the bead type at the site only, though numbers of separate contexts in which the bead type occurs on one site may sometimes be useful and will be referred to.

Guido (1978) contains a catalogue of beads from sites in Britain. Though beads are found on many sites, most are not securely datable to the fourth (and early fifth) century only. Those which are dated to this period are shown in fig. 101 and have been used to supplement my data.

## COLOURS

Blue and green beads are the most frequently occurring in all areas. Smaller numbers of yellow and black beads are also quite common. There are fewer red and white (or colourless) beads, and other colours such as brown, pink, etc. are unusual. Distinctions have not been made in tone, i.e., light green, dark green, since without a common reference point the individual opinion of what constitutes 'green' and what constitutes 'light green' may vary, and while some catalogues from which much of the data is compiled include light and dark tones, some only give the basic colour. As far as can be ascertained from the imperfect information about numbers of beads in each provincial area, there seems to be no difference in colour preference from one area to another, apart from perhaps white or colourless beads in Pannonia.

Translucent glass is most commonly used, though the distinctive large beads with trail decoration are usually made from opaque glass. Information on translucency is not always given in catalogues and therefore this could not be used to classify beads.

## ONE-COLOUR BEADS

### Short biconical beads

Widely distributed and most frequently blue, in all areas (fig. 102). Quite common in green and yellow also (figs. 103-4).

### Spherical beads

Most popular in blue in all areas with fewer sites having green and yellow beads (figs. 105-7).

### Cylinder beads with round section

Blue and green are the most popular colours for this type of bead in all areas (figs. 108-9). Yellow beads are also quite common throughout (fig. 110). Red cylinder beads with circular section are not very common and most of those west of the Rhine are quite near the frontier (fig. 111). There are none in Belgica, Britannia or Lugdunensis. Black undecorated cylinder beads are found on only one site in Pannonia, and in this sample do not occur in Raetia or Noricum (fig. 112). White cylinder beads are sparse but widespread (fig. 113). The largest numbers in the most contexts are found in Pannonia, for example these beads are found in 7 different graves at Sagvar.

### Cylinder beads with square section

Long beads were originally separated out from standard (cube shaped) examples, but this was found not to affect the distribution appreciably (see figs. 114-5). Found in blue and green mostly, less popular in yellow. Blue beads have a very peculiar distribution from this sample (fig. 116), only occurring at Krefeld-Gellep in Germania (there is also one from Tongeren with no context date, not shown, in the Musée Curtius, Liège), and with none in Belgica and Lugdunensis, while sites in Britain and in the Danube provinces are well represented. Green beads (fig. 117) also occur in Germania and Belgica as well as Pannonia and Britannia. Yellow beads do not occur in Britannia, Lugdunensis or Belgica in this sample, but are found further to the east (fig. 118). White square cylinder beads are found on sites in Pannonia (fig. 119), with beads of this type outside this province only at Chartres (Chartres Maison d'Archéologie unpublished C77.6312.6-12).

### Long cylinder beads with hexagonal section

Most common in green on sites throughout the study area (fig. 120). Much less frequent in blue (fig. 121), especially west of the Rhine; occurring in Britannia in only two graves at Lankhills, gr. 323 and gr. 336 (both designated by Clarke as foreign graves, Clarke 1979, 377-389), and on a necklace in one grave from Tongeren, gr. 37 (Vanvinckenroye 1984). This grave also contains a bracelet with threaded glass beads, which probably originates further east (see bracelets chapter).

### Beads with square section and diamond shaped facets

Blue examples are extremely common on sites in all areas (fig. 122). Green beads are much less common (fig. 123). In Britannia green diamond faceted beads occur only in the Lankhills cemetery in two of the graves in Clarke's foreign group.



**Segmented beads with round section**

**Sparse but widespread, mostly in blue and green (figs. 124-5).**

**Spherical segmented beads**

**These beads occur only in any quantity in colourless or white glass (fig. 126). There are also a couple at Lankhills containing gold foil, and therefore not included here. They are found on only a few sites in this sample, with none in Belgica, Germania, Noricum or Raetia.**

**Heart shaped beads**

**Blue heart shaped beads appear to be biased to Continental sites west of the Rhine (fig. 127), with presence at only one site in Raetia, Kirchheim-bei-München. The only example in Britannia is from Lankhills gr. 336 (again one of Clarke's foreign graves). Green heart shaped beads are less popular but have a similar distribution (fig. 128).**

**Convex cylinder beads**

**Only occurring in significant numbers in blue, these beads are not found in Noricum and Raetia in this sample but occur sparsely in other areas (fig. 129).**

**Flat round or flat cylinder beads**

**These are found mostly on sites in Pannonia, Belgica and Britannia (fig. 130).**

## **MULTI-COLOURED BEADS**

**Opaque annular beads with trail decoration, and those of other shapes, for example cylinder beads, cone shaped beads etc. with trail decoration are most frequent in Pannonia and in the provinces west of the Rhine (figs. 131-2). The strong presence in Belgica and Lugdunensis correlates with the known existence of a glass bead production centre which made these types at Trier (Loeschcke 1925). In Britain, opaque annulars and beads of other shapes appear to have different distributions, with annulars in the north and beads of other shapes in the south-west.**

**Examining the distribution of specific decorative motifs, annular beads with double swag and eyes are all from sites west of the Rhine except two from Sagvar in Pannonia (fig. 133). Annular beads with eyes only form two clusters, in Pannonia and west of the Rhine (fig. 134). Opaque annular beads with scrabble decoration (fig. 135) are found west of the Rhine only, apart from two in grave 21 6 at Altenstadt (Keller 1971), whereas opaque annulars with wave decoration predominate on sites in Pannonia and are found only at Trier west of the Rhine (fig. 136). However, these two designs are quite similar and merge into one another, so too much emphasis cannot be placed on these distributions without further data. (A few spherical beads with each of the above motifs have also been found, not shown, but possibly related to annular beads. These mostly occur at Krefeld-Gellep and a few sites in Pannonia.) Long black cylinder beads with trail decoration have a different distribution from black cylinders with no decoration**

(fig. 137). Long cylinder beads with feather trail have a similar distribution to eye beads, in Pannonia and west of the Rhine (fig. 138).

## DISCUSSION

### ONE-COLOUR BEADS

The most notable characteristic of the bead distributions is that the same types - long hexagonal green cylinder beads, blue square sectioned beads with diamond facets, blue and green cylinder beads with round section, blue and green biconical beads - are the most popular beads everywhere, represented on the greatest number of sites in every province.

These beads could be produced in one place and traded over long distances, or the distribution could be a result of an extremely homogenous 'late Roman' fashion in which desire for the same types was so strong that each manufacturing centre was turning out identical beads to meet consumer requirements. It has already been noted in chapter one that some types of beads copied precious stones - hexagonal green beads being the most obvious (Higgins 1961, 180; plate 57) which would presumably account for their popularity in this colour.

Some bead types have a widespread distribution in the main colour, and a more restricted spread in other colours. For example, blue, yellow and green cylinder beads are widespread, but red cylinder beads, an unusual colour, do not occur in Lugdunensis, Belgica or Britannia, the most westerly provinces. White cylinder beads, indeed white beads generally, occur most often in Pannonia. Hexagonal blue cylinder beads have a distribution mainly along the Danube, on the frontier line. Exceptions are those at Tongeren (here the other grave goods suggest a non-local origin) and Lankhills (in a "foreign" grave anyway). Green hexagonal cylinder beads are ubiquitous throughout the study area. With these beads of restricted distribution, since the form is known everywhere, it seems odd that the colour should be spatially limited in this way. It is very difficult to tell if this is, for example, because there were several bead workshops making green hexagonals, and the one in the Danubian area was also making blue hexagonals, or because there was only one workshop making hexagonals (presumably in this interpretation in the Danube area) and there was an Empire wide demand for the green ones and not for the blue. With other simple shapes like round section cylinder beads produced by cutting a longer length into sections (Guido 1978, 95) it is perhaps likely that the beads were made in several workshops, since the method is so simple.

Square cylinder beads are very odd. Yellow square cylinders are most popular on the Danube, perhaps originating here, with others at Krefeld-Gellep (there are also some from Tongeren, Musée Curtius Liège, which were not included as they have no context date). Green are found more widely, questioning Guido's suggestion that square examples of this type come from South Bavaria (Guido 1978, 96). Blue square cylinder beads are not found in Germania (though at Tongeren, as before there is no context) though they are very popular in Britannia and the Danube provinces. This seems to be a very peculiar pattern, and perhaps these beads were



produced in Britannia and on the Danube. White square cylinders probably originate in Pannonia since they are only found at Chartres apart from here (which may have foreign graves anyway, see below). They could have been produced elsewhere and merely traded to Pannonia which had a preference for these beads, but in this case it might be expected that there would be a few around a different area of production.

Heart shaped beads are found on very many sites in Belgica and Germania therefore it seems likely that these provinces had a preference for this bead type and they may have been produced here.

Green square sectioned beads with diamond shaped facets are quite uncommon. Sites where these beads have been found may repay more detailed examination. Those that occur at Lankhills (Clarke 1979) come from gr. 326 and gr. 323, both Clarke's 'foreign' graves, sourced by him to Pannonia (see also Swift 1994, 55-58). Guido also says that the coral and carnelian beads in some of these graves are only common finds in Hungary beyond the frontiers (Guido 1979, 294-5). Other possibly 'foreign' beads at Lankhills are hexagonal long blue cylinders, one each in Clarke's foreign graves 336 (SF 363) and 323 (SF 436), seen above to have a mainly Danubian distribution. Grave 336 also contains an amber bead. Amber beads occur on glass bead necklaces in very few places within the Empire; there are a few sites in western France, such as Lisieux (Service d'Archéologie, unpublished sép. 758) and Cortrat (France-Lanord 1963 fig. 13; *tutulus fibeln*, which are distributed around the mouth of the Elbe beyond the frontiers as well as in western France [Böhme 1974, Karte 6], were found in the same grave). Amber beads also occur in some Hungarian graves and are common beyond the frontiers (Guido 1979, 295). Carnelian diamond faceted beads and a carnelian flat hexagonal bead occur in grave 63, again in Clarke's 'foreign' group (reproduced here in fig. 179). The drop shaped green bead in gr. 336 is also most readily paralleled in Pannonia (for example at Sagvar in graves 172 and 261). The heart shaped bead in the same grave is the only example of its kind in this sample from Britain; though there is a green one at St. Albans, (fig. 128) most sites with these beads occur in Belgica and Germania, as above. Other unusual beads at Lankhills are convex cylindrical blue and blue-green beads, one of which occurs in ('foreign') grave 336 (SF 353), and one of which is found on a necklace with coral beads (SF 425), and a long blue kidney shaped bead (SF 215, reproduced here fig. 139), the only other example in my database being from Potzham in Raetia (Keller 1971, reproduced here fig. 139). The Potzham example is also blue, and occurs in a grave with a diamond faceted green bead, among others.

The single green diamond faceted bead found at Chartres (Chartres Maison d'Archéologie unpublished) was in sépulture 723 (C.77.7088.3) with other very unusual beads, two coffin shaped beads, one blue, one white. Another blue coffin shaped bead from Chartres is C.734224. Other types of beads which can possibly be sourced to a different area also found at Chartres are white square cylinder beads (C.77.6312.6-12) (probably originating in Pannonia) and a flat green hexagonal bead (C.73.1363), not to be confused with the popular type; Guido 1979 says that these flat beads come from Sarmatia, beyond the Pannonian frontier in the East (see



also Istvanovits 1993, Abb. 19). Blue convex cylinder beads, an unusual but widely scattered type, also occur at Chartres.

The diamond faceted green beads from Augst (Riha 1990) occur in two grave contexts. Some are found on a necklace with a hexagonal blue cylinder bead among others (2947), which may originate on the Danube, as above (fig. 121) though a blue heart shaped bead is also found on this necklace, which beads are more frequently found west of the Rhine. Another blue hexagonal cylinder occurs on necklace 2907 at Augst. The other green diamond faceted beads occur on a bracelet, 11 beads (2950). Other odd beads at Augst include another flat hexagonal green Sarmatian bead (2808) found on a necklace with a drop shaped green bead (mostly occurring in Pannonia, as before) (Riha 1990, 185 no. 2808, badly illustrated in Taf. 66 2808, reproduced here fig. 139). Flat polyhedral carnelian beads also occur here (Riha 1990, 184, no. 2790) and a bead shaped like a figure of eight with the perforation through the top section (no. 1343, though the context date is third or fourth century), an unusual type. Koch (1976) studied the distribution of 'cobalt-blue' beads of this type in the late Roman and early medieval periods and found them distributed mostly beyond the frontiers in the late Roman period (Koch Abb. 1) particularly in north Germany. Tempelmann-Maczynska (1985) also shows their distribution beyond the frontier (Taf. 30). Other beads of this type occur in my database at Burgheim (Keller 1971, reproduced fig. 139); Krefeld-Gellep (both in Koch also, see Liste 1); and Keszthely, gr. 56 (one yellow, one blue) and gr. 1469 (one dark blue). Riha (1990, 87), however, says that they occur within the Empire quite widely, in Pannonia, Raetia, Slovenia and Gallia. Finally, also from Augst came a long cylindrical bead with feather trail, which beads occur mostly on sites in Pannonia (see fig. 138).

The diamond faceted green beads at Krefeld-Gellep come from gr. 1470 (Pirling 1974) and gr. 2887 (Pirling 1979). Again, other unusual beads found at Krefeld are convex cylindrical blue and green beads (gr. 240, gr. 1822), six red beads (gr. 1231, gr. 1123, gr. 1574) and another achterformige bead (gr. 1469) as above. Diamond faceted green beads in Pannonia occur at Sagvar in gr. 149 (Burger 1966) and Keszthely in gr.10 and gr.73 (Sagi 1981). Other odd beads at Keszthely are an octagonal cylinder bead in gr. 56, two achterformige beads as above, and a bead made from millefiori glass in grave 49.

All the sites where green diamond faceted beads occur therefore have some beads that link them with Pannonia/Sarmatia (Lankhills, Chartres, Augst) or other areas beyond the frontier (Krefeld-Gellep, Augst, Keszthely), except Potzham which does have an unusual but unsourcable bead. Diamond faceted beads occur beyond the frontier in Sarmatia in quite large quantities (Parducz 1944, 51/plate XVIII, 59/ plate II 3; Guido 1978, 100; Istvanovits 1993, 126-7) and are widely distributed throughout northern Europe beyond the frontiers (Tempelmann-Maczynska 1985, Taf. 35). They continued to be used in western Europe and further east well beyond the fourth century (Guido 1978, 100; Istvanovits 1993, 26-7). Carnelian diamond faceted beads are also found at some sites in Pannonia (Alföldi 1957, 443) and Sarmatia (Istvanovits 1993, 126-7 type II/3B) and Istvanovits says that carnelian beads generally were widespread in eastern and central Europe during the Roman period (125). Tempelmann-Maczynska (1985) shows that blue



diamond faceted beads were more widespread than green beyond the frontier, present from 150 A.D. onwards, though green examples do occur, particularly around the north sea coast (Taf. 34). In comparison, while some other popular 'Roman' types also occur beyond the frontier, such as simple cylinder beads, other types common within the Empire such as long green hexagonal cylinder beads (not the flat Sarmatian ones) do not occur in any great quantity beyond the frontier (Tempelmann-Maczynska 1985, Taf. 33).

From the above evidence, it might be speculated that diamond faceted beads originally came from beyond the frontier, especially since they occur here earlier than they do within the Empire (blue diamond faceted beads are most common beyond the frontiers between 250 and 350 A.D., Tempelmann-Maczynska 1985, Tabelle 8). However blue diamond faceted beads are so widespread that it is also possible that they were soon produced in many different places even if they and the green examples were originally only manufactured further to the east.

Secondly, the above data shows that unusual bead types, some of which have associations with Pannonia or regions beyond the frontier, tend to cluster together where they occur at sites further west, and sometimes as well as several of these types occurring at the same site in some cases they occur in the same context or on the same necklace. This reinforces the suggestion that the types were not obtained locally. Such small numbers and other associated evidence (such as grave ritual in Clarke's foreign group, Clarke 1979) suggests the movement of people (women as well as men) attested from historical and other sources.

## **MULTI-COLOURED BEADS**

Here alone among all the categories of objects under examination in the thesis there is a known production centre at Trier where many of these multi-coloured trail beads have been found together with glass-working evidence (Loeschcke 1925). Since these beads are so different from the other one-colour late Roman examples, it cannot be assumed that one-colour examples were also made here, except perhaps one-colour annular beads. As already noted, Schulze (1978) examined the distribution of annular and spherical beads with wave and band decoration in four specific patterns (Abb. 1, types A-D). All the types are found to have a distribution primarily beyond the frontiers in the fourth century, in northern Germany and even further to the north east, moving west of the Rhine (Abb. 2-5) in the migration period, into the former provinces of Germania and Belgica. The only find spots within the Empire in the late Roman period are at Trier, where there was a workshop (Schulze 1978, 53; Loeschcke 1925), and some type B beads in Pannonia (a single wave within a border). My database adds a few beads from unpublished sites within the Empire, all dated by the excavators to the end of the fourth/early fifth century. A type A bead occurs at Illzach in Sequania (Musée de Mulhouse D.83.6.23) and there are three beads of types A, C and D at Virton (Masséart unpublished no. 5, Musées Royaux d'Art et d'Histoire Brussels). Schulze (1978) says that from the evidence these types of beads were exported into free Germany in the late Roman period and then made their way back in with the large scale movements of people in the migration period. My data does not include sites beyond the frontier. However, figs. 131-2 show that opaque beads with other types of multi-coloured trail



decoration, many of which are also present at the Trier workshop, are in fact popular and widespread within the Empire in the fourth/early fifth century. Securely dated contexts within the fourth century include beads from Lankhills (gr. 323, 350-70 A.D., Clarke 1979), Krefeld-Gellep (gr.1854, 300-350 A.D., Pirling 1974), Sagvar (gr.131, after 337 A.D., Burger 1966) and end of fourth or early fifth century context dates are also common, e.g. Maastricht (MAPL23/2-OJ-17, MAPL23/2-OK-35, Sectie Archeologie Gemeente Maastricht unpublished); Lisieux (sép. 745, Service d'Archéologie Calvados); and Krefeld-Gellep (gr. 720, Pirling 1966). Annular beads with double swag and eyes and beads with scrabble decoration are biased towards sites west of the Rhine, while cylinder beads with feather trail and annulars with single wave decoration are biased to sites in Pannonia (both also occur at Trier). Beads with coloured 'eyes' are frequent finds in Pannonia and west of the Rhine, excluding Britannia. Tempelmann-Maczynska (1985) shows the distribution of these types beyond the frontier throughout the Roman period. Beads with double swag and eyes are widespread (Taf. 48), and the greatest concentrations are found between 150 and 300 A.D. (Tabelle 8). Beads with eyes (most common between 70 and 210 A.D., Tabelle 8) and those with single scrabble and single wave decoration (most popular in the third century) are more frequent around the Elbe (type 263, Taf. 47) and the North Sea coast (type 260-61, 218, 220, 224d, e, shown in Tafeln 44-5, Taf. 47). All these types are said to also occur less frequently in the fourth and early-mid fifth century also (Tabelle 8). Beads with feather trail are shown to be widespread but never very common beyond the frontier (Taf. 53) and only occur up to the beginning of the fourth century (Tabelle 8). Istvanovits (1993, 125) says that multi-coloured beads occur in Sarmatian contexts from the second century on, with wavy line decoration being characteristic of the late Sarmatian period.

The presence of all bead types at Trier and my distributions as shown confirm the suggestion that Trier was a significant production centre for multi-coloured beads with trail decoration, though their widespread distribution beyond the frontier for many centuries shown by Tempelmann-Maczynska (1985) must cast doubt on the suggestion that they were all produced within the Empire for export. She says that production beyond the frontiers must also be considered despite the lack of evidence (134). It seems that in the late fourth and fifth century most types were not produced for trade beyond the frontiers but had a market within the Empire as well. It may be noted that most of those which are given a date at the end of the fourth century/early fifth century are from recent as yet unpublished excavations (Virton, Maastricht, Lisieux, Illzach) which may indicate that as sites of this date are placed more accurately within the crossover fourth to fifth century period rather than the fourth century these beads may be found to occur much more often in end of fourth/early fifth century contexts than they do in early-mid fourth century contexts. The production centre at Trier may have been catering to the demand in this period only, now stronger or equally strong within the Empire, and certainly cannot be taken as the origin for beads of the same type beyond the frontiers which generally occur in much earlier contexts. Examining my data there is no strict division between multi-coloured beads with trail decoration and the small one-colour type considered as more typically 'Roman' with respect to grave contexts. Though many necklaces occur in just one-colour beads, (e.g. Augst, Riha 1990,



Taf. 77 2968, reproduced in fig. 179) and some in annular beads only (e.g. Virton, Masséart unpublished; Augst, Riha 1990, Taf.66 2793 reproduced in fig. 179), necklaces with both types of bead are also common (e.g. Riha 1990, Taf. 66 2808 reproduced in fig. 179).

## SUMMARY

It is very difficult to draw any definite conclusions from the distribution of beads in this period and particularly hard to say anything about production areas, but it can be said that preferences are mostly exactly the same in different areas, with a few slight variations in preference for bead types in certain colours which may have been produced locally. Even beads beyond the frontiers occur in many of the same types as those within the limes by the fourth century, usually because beads popular outside the Empire before this period, such as multi-coloured beads and diamond faceted beads are now found within it also; there seems to be no appreciable movement of types the other way. The presence of unusual beads which are much more frequent in another area is sometimes identifiable. Their association with one another in graves implies that some beads were moving with the wearers rather than deliberately traded. These movements of people might obscure the place of origin of many beads. A few types can be identified as probably foreign where they occur in Britain; only one type, white square cylinder beads, appears to be specific to a single province, Pannonia.

## CHAPTER 4: BRACELETS

There are no detailed studies of late Roman bracelets apart from Cool (1983) who looked at British types and my own study of regionality (Swift, 1994). The typology for the analysis is based on this (11-17) and also correlates with Cool's work (15). Bracelets are divided into precise types according to form and decoration. Late Roman bracelets fall into several main categories: cable bracelets made of a number of strands of twisted wire; simple wire bracelets with various fastenings or with penannular terminals; heavier solid cast bracelets; strip bracelets made from a flat sheet; and hollow bracelets made from a rolled sheet. Some decorative styles occur on more than one type; for example bracelets with snakeshead terminals occur in both the flat strip variety and in wire bracelets with round section, the terminals being hammered flat and stamped. Usually, a particular decorative motif is confined to bracelets of a specific form. For the purposes of the analysis, it was found that the distribution of specific decorative patterns gave the best results. It was found that, compared to my previous work (Swift, 1994), many more decorative patterns were present in a larger sample, and that regional patterns are clearer when bracelets are divided into smaller groups based on precisely identical patterns rather than a general style of decoration, and therefore the typology previously used has been refined. Types used for the analysis are listed below (table C, 95-8). Over 300 types of strip bracelets with different individual patterns occur in the database, and over 100 types of terminals for snakeshead bracelets. It is clearly not possible to describe and plot distributions for all of these types, many of which are in any case unique or only occur two or three times. For the most part, bracelet types were used which occurred in the largest numbers. However, some types were deliberately not used, as there was some difficulty in determining their exact appearance. With such a wide range and standard of material being used (from the objects themselves to rather poor quality drawings and photographs) some types might easily be confused when drawn using different conventions. This was found to be a particular problem with snakeshead bracelets with moulded three-dimensional heads, which are illustrated extremely badly in many publications, sometimes only in side view.

It is a notable characteristic of decorative style popular in the late Roman period that this is rather fluid with types merging into one another. Designs with faceted surfaces can be regarded in two ways, looking either at the parts which have been cut away or the raised areas remaining. For example, the length of the notches cut into the edge of strip bracelets will have an effect on the final appearance with short notches appearing as just that, while long notches make the resulting raised zig-zag pattern more apparent. Similarly, horizontal grooves with plain sections in between easily merge into bead imitative decoration with the corners taken off more rounded plain sections. These types have been used as they can be categorised on careful inspection, but there may be some areas of overlap. Types used in the analysis are generally very precise and only very closely similar or identical bracelets are included in each type. Bracelets which at first appeared to belong to a specific type, but on closer investigation did not correlate closely with the group or have many features in common with the others apart from decorative motif (cross-section, type of fastening etc.) are noted in the text. Sometimes the distribution of a larger group



with similar motifs is examined. This is usually done where a) two or more decorative patterns or terminal types are clearly related and b) the individual type is present in too small a number to be investigated alone. An example is snakeshead bracelets with a square or rectangular end and two punched circle and dot motifs. This group is clearly related but there are small differences in the terminals which have been classified as terminal types 44, 51, 52, 62 and 98. Individually, these only occur three or four times but together they form a discrete distribution. Unless specified otherwise, however, it should be assumed that each bracelet shown on the distribution map is closely similar. For a more comprehensive typology, which it is not the aim of this work to produce, the reader is referred to Cool (1983) for British types, Alföldi (1957, 418-422) discusses types found in Hungary and Keller (1971) is useful for those occurring in the Danube provinces more generally.

The tendency of the Roman craftsperson to use unstable, fluid designs that metamorphose as they are looked at, and which cannot be easily typified, as mentioned above, is interesting in itself. Objects which use animal ornament are often very stylised, such that the animal itself is barely recognisable. So called 'snakeshead' bracelets have a greater or lesser degree of realism; some are only denoted by the circle and dot stamp used for the eye of the creature (the eyes being the only necessary thing as they are a direct signifier of the creature's inner living existence). Stylisation and ambiguity is also apparent in the other objects under discussion, for example the niello bow motifs of crossbow brooches (looking at the niello or the metal thrown into relief) or the horsehead buckles thought to have developed from dolphin buckles; the crest on the dolphin has become a backwards facing horse's head; the dolphin itself still has eyes. Onians (1980, 1) discusses the tendency in late antique art towards more ambiguous or even abstract motifs which lend themselves to varying interpretation by the viewer rather than dictating one interpretation as Classical naturalism does. This is also commented on by Elsner (1995, 23) who draws attention to the importance in late antique art of the imaginative response of the viewer. It is interesting that these tendencies in late antique art can be seen not only in the high status prestige objects usually thought of as 'art' - painting, sculpture, mosaic etc.- but also in sometimes very basic copper alloy jewellery such as bracelets which could be viewed by their wearers in a number of different ways.

## CHRONOLOGY

Most bracelet types can be dated stylistically to the fourth century. Some types are also found in the third century and earlier, and where this is the case, only examples on sites or in contexts datable to the fourth (and in a few cases early fifth) century have been used. Although in the other chapters material dating primarily to the fifth century has been used to a certain extent (since crossbow brooch types, for example, continue in a seamless development from the fourth to the fifth century), the 'Germanic' style '*Kolbenarmringe*' (bracelets with thickened ends) which are the predominant fifth century type have not been included here as they are unrelated to late Roman bracelets, and occur only in free Germany before the fifth century (Werner 1980). (Distributions and discussion of the fifth century Germanic types may be found in Swift 1995.)



Bracelets of fourth century type can rarely be assigned to a more specific period within the fourth century. This is perhaps mainly because there seems to be little typological development through the century which might assist in constructing a relative chronology, and because, even if such typological variation existed (possible examples are discussed below), most bracelets come from provenances with no context date or a general deposition period given as 'fourth century' 'late Roman' etc. Cool (1983, 213) considered the probability that some bracelets usually thought to be fourth century merely from their style are also found in the late third century. She does not give more precise date ranges for any specific 'late' types. There is also continuing occurrence of late Roman types on some early fifth century sites, particularly in Pannonia (Swift, 1995, 36). As expected, therefore, 'late' Roman bracelets do not begin to be produced in 300 A.D. and stop being produced in 400 A.D. but the fourth century date usually assigned to these types is of course still approximately correct.

566 bracelets in the database occur in datable contexts with a narrower date range within the fourth century. It was found that only a few types were represented in enough numbers to comment on chronology. More datable contexts from the second half of the fourth century are represented, with only a fifth of bracelets from pre-350 A.D. contexts. Where bracelets are of types which occur before the fourth century as well as during this period (cable bracelets with plain hook and eye terminals; bracelets with twisted square section; solid undecorated penannular bracelets and similar bracelets with horizontal lines at the terminals; undecorated bracelets with expanding fastening) they have not been used from sites which overlap too much with the third century (or from undatable contexts). Therefore an apparent bias in date to after 350 A.D. in these types may not be real - for example, most 2-hook cable bracelets in the database come from mid to late fourth century contexts. Many of the dated 2-hook cable bracelets come from a single grave at Lankhills, dating to 350-70 A.D., and those found on other sites are also post 350 A.D. Examples would include Tongeren (Vanvinckenroye 1984 grave 111 13, mid fourth century), and Vron (Seillier unpublished t.167a 5, 366-400 A.D., and t.198a 5 389/415/20 A.D.). (In two of these cases, Tongeren and Vron t.198a 5, the number of strands is not known; the other bracelet from Vron, t.167a 5, has 2 strands.) The prevalence of dates after 350 A.D. could, therefore, represent the time period of production in antiquity, or it could be a result of bias in my data collection. However, most types are stylistically datable, and contexts overlapping with the third century have been used in these cases (this includes cable bracelets with distinctive wrapped terminals, said by Alföldi [1957, 419] to date from the late Roman period; 2-hook bracelets seem to be stylistically late also). It can be concluded that these types stylistically datable to the fourth century at least reached their greatest popularity in its second half.



## Specific datable types

Strip bracelets with a1 and a2 decoration range throughout the fourth century, as do cogwheel bracelets, though more are found in later contexts. Bracelets with imitation beaded decoration (specifically the effect of each long bead separated by several short ones) also tend towards a later date range, with dated examples after 350 A.D. from Oudenburg (Mertens and Van Impe 1971, plate LXV 5), Icklingham (West and Plouviez 1976, fig.39 7) and St. Albans (Frere 1984, fig.10 65-7). The two examples from Colchester (Crummy 1983 1719 BUC1550 and 1717 BUC603) have a wider date range of 320-450 A.D., as does the example from Somogyzsil in Pannonia (Burger 1979, grave 129 4, with a coin dated to 335-337 A.D.).

Hollow bracelets appear to be most restricted in date, with all examples in Pannonia having dated contexts of the mid fourth century (Keszthely, Sagi 1981, grave.73 8; Somogyszil, Burger 1979 grave 38 3, grave 40 3 [slightly later, 350-400 A.D.], grave 80 7-8, grave 88 1). Different types of hollow bracelets are found in early contexts, for example at Augst (Riha 1990 Taf.75 2941, Taf.20 552-559). Penannular bracelets with tapered ends occur in contexts up to and around the mid-century in the Danubian provinces. At Somoyszil they occur with a context date of 364-7 A.D. (Burger 1979, gr.38 2). Bracelets from Regensburg (Von Schnurbein 1977, grave 509 5, 6, 8, and grave 924 3) are dated by their contexts to 270-360 A.D. At Keszthely they are dated to 320-30 A.D. and 330-40 A.D. (Sagi 1981, grave 110 6 and grave 101 1 respectively). They occur with slightly later context dates in the western provinces, for example at Oudenburg (Mertens and Van Impe 1971 Pl.IV 2, 4) they are dated to 350-410 A.D., at Tongeren to the mid fourth century (Vanvinckenroye 1984 grave 44 1), and at Vron to 389-415/20 A.D. (Seillier unpublished t.241a 4).

Some other bracelet types appear to be predominantly in mid-late contexts such as those with multiple motifs and those with b3 decoration. All datable examples of the latter come from contexts in the late fourth or even early fifth century (Vron, Seillier unpublished t.245a 6, dated to 370/75-388 A.D; Colchester, Crummy 1983 1703BKC712, from an Anglo-Saxon context, and 1704BUC354, with a context date of 320-450 A.D.; Gondorf, Schulze-Dörlamm 1990 no. 386, dated to the mid 4th century; Oudenburg, Mertens and Van Impe 1971 plate LXV 3, dated to 350-410 A.D.; Shakenoak, Brodribb et al 1973 no. 191, with a late 4th century context date). Bracelets with a date at the end of the fourth or early fifth century seem to be developing slightly away from the standard 'late Roman' type; for example, there are a number of slightly odd penannular strip bracelets at the cemetery of Vron near Boulogne which dates from about 370 to 455 A.D. (Seillier 1989 and unpublished). For example, bracelets from tombe 245a no. 7, 249a no. 3, and tombe 265a no. 3a (Seillier unpublished) have a number of stylistic points in common with probably mid-fifth century bracelets found at Chatham Lines, Chessel Down, Abbeville and Tournai. The Tournai bracelet (Brulet 1991, planche 10), has a dated context of the mid-fifth century. The other bracelets (the first two are illustrated in fig. 140) do not have associated context dates (Evison 1965). Considering the bracelets from Vron (Seillier unpublished), the bracelet from t.245a (7) is D shaped in section. The ends expand widthways and look as though they may flatten also, though this appears not to be the case in section. The bracelet is

decorated with a punched dot motif within parallel lines. The terminals of the bracelet have an animal motif. A pointed motif extends from the body of the bracelet into the centre of the flat terminal. The animal has two ears, very distinct, and the muzzle has a central line of dots. On one end the two animal heads are confronted, the other has a single animal head. The grave dates to 370/75-388 A.D., towards the end of the fourth century, and the other bracelets in the grave are typical late Roman types.

In particular the Chatham Lines bracelet (Evison 1965) has several related features. It is a penannular bracelet, apparently D shaped in section with the terminals expanding widthways into flat discs, decorated with incised parallel lines. There is a central swelling and confronted central motif of lines and arc and dot stamps. There is a line down the centre, and what appears to be a rudimentary animal head with ears, eyes and muzzle. A pointed motif extends from the body of the bracelet into the centre of the flat terminal. The other end is missing.

Given these similarities and the spatial restriction of similar bracelets to an area around the channel coast in Kent and northern France it is possible that at Vron the first traces of a fifth century tradition developing in part from late Roman material can be recognised (as opposed to the Germanic tradition discussed above), though more evidence would be needed to move beyond speculation on this point.

## SPATIAL ANALYSIS

2,309 bracelets were collected from sites within the study area. Sites with bracelets are shown in fig. 141 and the distribution of sites with bracelets in each provincial area in fig. 142.

Numbers from each province are as follows:

Britannia 905

Lugdunensis 54

Belgica 207

Germania 265

Sequania 68

Raetia 239

Noricum 65

Pannonia 506.

Numbers from Britain are doubtless very large as I was able to use some data from Cool's study of bracelets in Britain (Cool 1983). (Although Cool looked at over 2,000 bracelets, only those illustrated have been used in my database to supplement my other material collected from Britain.) However, even taking this into account, bracelets were undoubtedly very popular in the province. Since the largest numbers are from Britannia the finest resolution of spatial variability will be expected from here. Pannonia also has very large numbers of bracelets, which is a result of the fourth century custom in this province of burying women with large numbers of bracelets on



the left arm (see Lanyi 1972). Numbers for Sequania, Noricum and Lugdunensis are quite small, and this must be taken into account when considering results from these areas.

Different customs in the way bracelets are worn at burial (and possibly in life) can be seen in the different areas with bracelets usually deposited in the grave in the more western areas and more often worn at burial (in pairs, or in Pannonia predominantly on the left wrist) in the Danube area (see Swift 1994).

If bracelets are divided into groups and the distribution in each province examined, the results are quite striking (fig. 143). Flat strip bracelets are most popular in Britannia, with quite large proportions also for provinces west of the Rhine - in Belgica, Germania and Sequania. They are less common east of the Rhine. Solid penannular bracelets are the most popular types in the Danubian provinces, and form a much smaller proportion of the total in provinces west of the Rhine. The Danube provinces are also the only areas where hollow bracelets are found in any quantity. Cable bracelets are found in roughly similar proportions in all areas, with most, a quarter, in Germania.

It is immediately apparent that there are strong regional differences. These are also clear from the spatial distribution of each specific type or related group, given below.

#### Cable bracelets (fig. 144)

A large number of cable bracelets have not survived well and the terminals are often fragmentary or missing. Only complete examples are investigated below. 3-strand cable bracelets with plain hook and eye fastening are widespread (and much more numerous than shown here, but examples from undatable contexts have not been used as they could be earlier than the fourth century). Those in fourth century contexts are sparse everywhere and they do not occur in Noricum (fig. 145). 2-strand cable bracelets with plain hook and eye fastening have a similar distribution; they do not occur in Raetia or Noricum, but a scatter occur in most other areas (fig. 146). 4-strand cable bracelets with plain hook and eye fastening (not shown on the maps) are found in Pannonia at the site of Dunapentele (Intercisa) only, but only one of these bracelets comes from a datable fourth century context. 4-strand cable bracelets with hook and eye fastening and terminals wrapped in sheet metal bordered by two cuffs (fig. 147) are also regional to the Danube provinces, this time forming a strong regional cluster in Raetia with some finds in Pannonia, and a few in Sequania and further afield (Krefeld-Gellep and Colchester). Some of these bracelets have lost the sheet metal enclosing the terminal but the strands of wire remaining suggest that they were once covered. These finds are shown as probably having wrapped terminals. 2-strand cable bracelets with hook and eye fastening and wrapped terminals occur in Pannonia and Noricum with presence also at Avenches and Canterbury (fig. 148).

2-strand cable bracelets with 2-hook fastening are found in the extreme south of Britannia with one also at Vron on the coast in Belgica (fig. 149). 3-strand cable bracelets with 2-hook fastening are also found in the same area of Britannia with two finds in Belgica (fig. 150). These 2-hook bracelets occasionally have a wrapped fastening but can be easily distinguished from the types above by the lack of two encircling cuffs at either end of the wrapped section.

### **Wire bracelets with threaded glass beads (fig. 151)**

These distinctive bracelets often have a hook and eye wrapped fastening (e.g. Atzgerdorf, RGZM 036330; Regensburg, gr. 509 1 Von Schnurbein 1977) which relates them to the cable bracelets with this feature. They are found in the Danube provinces with a single example at Tongeren in Germania (fig. 152). The beads strung along the wire are popular types such as blue diamond faceted beads and green hexagonal cylinder beads.

### **Penannular solid bracelets (fig. 153)**

Solid penannular bracelets without decoration (unvarying round, oval or D shaped section) are popular and widespread, though many do not occur in datable contexts (76). In this sample they do not occur in Britannia, Belgica or Noricum in fourth century contexts (fig. 154) and there is only a single example in Lugdunensis. They are found in Germania, Raetia and Pannonia.

Penannular solid bracelets with tapered ends are not found in Britannia, or Lugdunensis. They occur most frequently in Germania, Raetia and Pannonia (fig. 155).

### **Other solid bracelets (fig. 151, expanding bracelets fig. 156)**

Bracelets with twisted square section, using only fourth century datable contexts, see above, form a strong cluster in Britannia. They are also found on some Continental sites (fig. 157) notably on the limes in Germania. Undecorated bracelets with expanding fastening, using only datable fourth century contexts, fall into three clusters: in the south of Britannia, immediately across the Channel in Belgica and Lugdunensis, and along the limes in Germania and Raetia (fig. 158) - there is also one find in Pannonia. With both of these types some exist from undatable contexts which could not be used. Bracelets with bead imitative decoration form a strong regional cluster in southern Britannia (fig. 159), with a few outliers including three in Pannonia (Somogyszil and Intercisa).

### **Hollow bracelets (fig. 153)**

Hollow bracelets are much more common finds on sites in the Danube provinces than those west of the Rhine (fig. 160). Many finds are of fragmentary bracelets as they are quite fragile, but of complete examples, hollow penannular bracelets with fixed fastening (undecorated except two from Sagvar with horizontal lines across the terminals) are found in the south east in Pannonia (fig. 161). Hollow penannular bracelets with no decoration and those with incised lines across the terminals are found in Pannonia and along the limes (fig. 162).



**Strip bracelets with cut out decoration (fig. 151)**

Bracelets with a narrow front face, a long rectangular cross-section and cogwheel decoration cut out along the sides are extremely popular throughout Britannia. The only Continental site on which they occur is at Oudenburg on the Channel coast (fig. 163). Bracelets with cut out circles in a sun motif are found only in southern Britain (fig. 164). Bracelets with a scalloped edge and punched circles (b13) cluster in a small area of Raetia with a couple of finds in Germania at Tongeren and Krefeld-Gellep (fig. 165). The finds at Eining, from Keller 1971 (Taf. 19 4 and 5) and the Römisch-Germanisches Zentral Museum Mainz illustrated inventory book (no. 16305, and 7367) may be the same bracelets, i.e. 2 bracelets instead of 4 at this site.

**Strip bracelets with notched and faceted decoration (figs. 156, 166, 167)**

Strip bracelets with alternate notches along the edges (type a1) are very common in Britannia and also widespread in Belgica and Lugdunensis with a small cluster in Raetia at Pfaffenhoffen, Valley and Hechendorf (fig. 168). They are not found in Noricum or Pannonia. Strip bracelets with facets along the edge to form a zig-zag pattern (a5) related to type a1, are found to the east and south-west in Britannia with two outliers at Froitzheim in Germania and Augst in Sequania (fig. 169). Narrow strip bracelets with a2 decoration are most popular in Britannia with a scatter in most other areas (fig. 170). Since the design, simple transverse grooves, is so simple these bracelets cannot necessarily be assumed to be related to one another. (They have also been distinguished from wider bracelets with transverse incised lines which are not shown). Strip bracelets with a13 decoration are found in southern Britannia only (fig. 171). Strip bracelets with a14 decoration are found in Britannia clustering in the south west and in East Anglia, with an outlier at the military site of South Shields (fig. 172). On the continent they also occur at Basel. Strip bracelets with a39 decoration are widespread, though not particularly common (fig. 173). Strip bracelets with a34 decoration, a ribbed narrow strip with added blocks, are found in Britannia in the extreme south west apart from one outlier at Denton, Lincolnshire (fig. 174). Strip bracelets with alternate long facets (a related group of several individual decorative patterns) occur in Britannia only, mostly in the south-west, and are not present either in the extreme south or in East Anglia (fig. 175). Strip bracelets with a8 decoration and those with related motifs are found in Britannia in the south west and East Anglia and also scattered in other areas (fig. 176). Strip bracelets with a10 and related decoration are found in two clusters in southern Britannia and Raetia (figs. 177-8).

**Strip bracelets with punched circle and dot decoration (figs. 179-180)**

Strip bracelets with a line of punched circle and dot motifs are found most frequently in Britannia with a bias to the south-west. They also occur on a few other sites on the Continent (fig. 181). However not all examples have a particularly similar appearance and they were probably not all made in the same place. Strip bracelets with the same decoration within a border of lines are not common in Britannia; they are only present at Canterbury, and three coastal military sites, Portchester Castle, Caernarvon and Caerwent. They occur mostly along the line of the military



road in Raetia/Noricum as well as in Pannonia (fig. 182). There is one find in Lugdunensis at Lisieux. B14 decoration, punched circle and dot motifs with an embossed border, may be related. Strip bracelets with b3 decoration, (related to a5 above) are found in southern Britannia and in Belgica; they seem to skirt the borders of Germania Inferior though they do not actually occur within this province, apart from one find on the coast at Oudenburg (fig. 183). There is also one at Augst. Strip bracelets with punched circle and dot decoration separated by incised lines (a related group whose members are not all exactly similar), are scattered west of the Rhine with one example in Pannonia; again they are not found in Germania Inferior (fig. 184). Strip bracelets with b10 decoration are found in central southern Britannia with one at Caernarvon and a single find in Belgica at Champlieu (fig. 185). Strip bracelets with b15 decoration occur only in southern Britain with one find in East Anglia and another at Tournai in Belgica (fig. 186). Strip bracelets with b16 decoration are not very common but small numbers are found in Sequania and Germania with one each also in Pannonia and Raetia (fig. 187).

Strip bracelets with b31 and related decoration are often wider than other strip bracelets with a distinctive raised circle just behind the terminal (Köln, Römisch-Germanisches Museum 280; Damery, Brisson et al 1969 planche III 15; Compiègne, Musée des Antiquités Nationales St.Germain-en-Laye 28960). They are found principally in Belgica, clustering around Evreux/Vermand and the Fôret de Compiègne, with one outside this group at Otterfing in Raetia (this bracelet is rather dissimilar to the rest of the group and is included with some reservations) and another at Silchester in Britannia (fig. 188). Related bracelets with a similar border, raised circle and wider strip with a wave decoration rather than the punched circle and dot patterns characteristic of the b31 group occur at Krefeld Gellep and Köln (fig. 189). Strip bracelets with a rosette motif are confined to Germania, Belgica and Lugdunensis (fig.190). They are also related to b31 with many being wider than the average late Roman bracelet and having the same raised circle terminal feature (e.g. Trier Römisch-Germanisches Museum S.T.2 10 8a, inv. 18 909, inv. 33, 48; Chartres sépulture c.77.7309.1 Chartres Maison d'Archéologie unpublished). Generally bracelets with blocked terminals occur in Britannia, Lugdunensis, Belgica and Germania. But on closer examination those with decorative styles which can be sourced to Britannia have a rectangular block on a solid cast bracelet with D-shaped or rectangular section, whereas those found on bracelets with b31 and related motifs, h3, h4 and h5, and rosette motifs, are circular raised bumps on an otherwise flat strip (fig. 191).

#### Strip bracelets with multiple motifs (fig. 192)

Strip bracelets with multiple motifs are concentrated in Britannia, especially in the south-west, and are also found in Germania, Belgica and Lugdunensis, with a single example in Sequania at Augst (fig. 193). Again there is a noticeable absence of Continental finds north of a line roughly following the Meuse. Bracelets of this type with an identical series of motifs sometimes occur at the same site, e.g. m5 at Lankhills, or at sites quite close together, for example m34 at Lydney and Woodeaton, m15 at Canterbury and Colchester, though there are also some examples more widely spaced (m46 at Rushall Down and Trier) (figs. 194-6). The occurrence of individual motifs



within the series can also be examined. Bracelets with motifs E and I cluster in East Anglia/the east coast with a few also further south-west (figs. 197-8). Motifs F and H (fig. 199-200) are more widespread in southern Britannia with motif G (fig. 201) found clustering in a line across central southern Britannia. Motif D also has this distribution (fig. 202). Motifs F and H also occur relatively frequently on Continental sites. Multiple motif bracelets usually have a hook and eye fastening but some occur with snakeshead or penannular terminals; these types have a more southerly distribution in Britannia with a few outliers (fig. 203).

#### Strip bracelets with other motifs (figs. 167, 204)

Strip bracelets with bands of hatching are found in the south-east and along the east coast of East Anglia and have one of the most precise and restricted distributions (fig. 205). Strip bracelets with d6 decoration are found in southern Britannia and East Anglia only, apart from one example at Chevrens (fig. 206). Related bracelets with d5 decoration are also found in southern Britannia and on a couple of Continental sites. Strip bracelets with e2 decoration occur to the south east in Britannia and at a couple of sites across the Channel, Vron and Beauvais (fig. 207). They are also found at Azlburg and Valley in Raetia. Strip bracelets with a line of punched dots (f1) are found in southern Britannia and in Germania and Belgica (fig. 208). The motif is so simple, however, that the bracelets are not necessarily related and there are in fact some differences in terminal types and other details. Strip bracelets with decoration c2/c5 (horizontal lines within a border) are found in Pannonia and Britannia, more frequently in the east (fig. 209). However if the Pannonian examples are examined more closely three of the four have penannular terminals: (Intercisa (II) 146, 149 and Keszthely gr. 107 4). None of the bracelets in Britannia have penannular terminals. It can therefore be concluded that these bracelets are not related, not suprising considering the simple decorative motif. Strip bracelets with bands of horizontal lines (a related group where not all examples are closely similar) are most common in southern Britannia and in Germania and Belgica, with a few examples outside these provinces (fig. 210). Again this is such a simple motif that it cannot be assumed that all these bracelets originated in the same place.

#### Penannular snakeshead bracelets (figs. 204, 211-214)

Snakeshead bracelets with type 1 terminals are found in the south in Britannia and in Germania Inferior in a seemingly restricted area (fig. 215). Snakeshead bracelets with type 12 terminals are the only other snakeshead type with a western regional distribution, this time sparsely occurring in all provinces west of the Rhine (fig. 216). There is some variation within the group and the examples from Pannonia cannot therefore be assumed to have travelled here from the west. Snakeshead bracelets with type 10 terminals form a very strong regional group in Raetia and Noricum, only a single example found at Conflans-sur-Seine in Belgica outside this area (fig. 217). They are one of the most distinctive types despite occurring in two variations, flat strip bracelets and solid bracelets. These variants have different distributions apparently based on the frontier line and the military roads in the area (fig. 218). Snakeshead bracelets with diamond



shaped plain head and eyes (type 28) form an even smaller regional cluster within Raetia (fig. 219). The example from Oudenburg is found to be somewhat different (fig. 211 bottom right), with a more elongated head and imitation cable decoration, and is probably not related. Another type, 105, with diamond shaped head and facets is also probably not related as it has a different distribution in Pannonia. The bracelet in Britannia at Caistor-by-Norwich is however a good example of the type and may be assumed to have originated with the main group. Snakeshead bracelets with type 18 terminals, (and type 68 terminals, related) are found in Noricum and Pannonia, with one on the Raetia/Noricum border as well (fig. 220). Snakeshead bracelets with type 23 terminals and related (34, 65, 101) clearly form a strong regional group in Pannonia and Noricum (fig. 221), with an outlier on the hook of the Rhine in Raetia (Arbon). Snakeshead bracelets with type 93 terminals are found in Pannonia and along the Danube limes (fig. 222). Those with type 36 terminals have a similar distribution (fig. 223). There is also one at Colchester. Snakeshead bracelets with type 31 terminals occur mostly in Pannonia, with a couple of examples beyond this, one each in Raetia (Lorenzberg) and Germania (Krefeld-Gellep) respectively (fig. 224). Snakeshead bracelets with types 42 and 55 terminals occur in Pannonia with single finds in Raetia (225-6). Finally those with square or rectangular ends and two punched circle and dot motifs are clearly restricted to Pannonia (fig. 227).

## Discussion

The distributions represented by bracelets are very interesting and show regionality operating on several different levels. There are four different patterns of spatial distribution; 1) types that occur universally, 2) types that have a more restricted regional occurrence in one province, sometimes with a notable absence in one or more areas, 3) types that have a very small inter-provincial distribution and 4) types which occur in greater numbers in one area and in significant but smaller numbers in another. Finally, sites with possible 'foreign' bracelets will be discussed.

### 1. Universal types

Types such as cable bracelets occur universally. The distribution of cable bracelets with different types of fastening and different numbers of strands, however, shows that they were certainly produced in more than one place and that there are distinct regional differences between these bracelets found on the Danube and those further west. Even more notable, there are differences in the types most commonly occurring in each province. The empire-wide demand for cable bracelets (which are a popular type throughout the Roman period) is met by the workshops in various regions in slightly different ways. Bracelets from Raetia (4-strand cable bracelets with a distinctive hook and fastening with the ends of the strands enclosed in rolled sheet metal with two cuffs) can be distinguished from those originating in Pannonia (4-strand cable bracelets with a plain hook and eye fastening) and unsurprisingly cable bracelets in these two nearby provinces are more similar to each other than those found in Britannia (2 and 3-strand bracelets with a 2-hook fastening). This evidence suggests that although there was universal demand for some styles there was no central production.



## 2. Regional restrictions

Some bracelet types are found only in a single province, following the same patterns as those established for cable bracelets with different types of fastening. Hollow bracelets with fixed fastening and snakeshead bracelets of types 31, 42, and the group of snakeshead bracelets with a square head and two punched circle and dot motifs, are all specific to Pannonia. These bracelet types were undoubtedly produced in Pannonia and were not traded to other areas, therefore representing a regional preference. Similarly cogwheel bracelets are extremely popular in Britannia but are not found elsewhere, and this is especially significant given that other British types are found in some numbers abroad (see below). B31 and related decoration, bracelets with h3 and h4 decoration, and those with rosette motifs, often on a wider band than is usual for strip bracelets and with a recognisable fastening different in small details from those common in Britain, were clearly produced in the same workshop as each other and distributed only in Belgica. Snakeshead bracelets with type 10 terminals form a strong regional group in Raetia/Noricum. The cable bracelet distributions above show that if there is a universal demand for a particular type, it will occur universally (albeit with slight variations), despite being produced in different regional workshops. Therefore regional types cannot be explained purely in terms of the set-up of workshops in the period, and must have a basis in regional style preferences as noted in chapter one. These preferences will be further discussed in the final chapter. It is difficult to tell if types found in one province all stem from the same workshop in that province, or if they are made in a number of places which copy the same style. Simple types such as cogwheel bracelets, although distinctive, could easily be reproduced by different places with exactly the same end result. Snakeshead bracelets with type 10 terminals occur in two different variants, as flat strip bracelets with punched decoration on the body of the bracelet to form a border, and in a three-dimensional type with round cross-section and moulded head. These could be two different workshops executing the same design in a slightly different way, or they could represent stylistic drift over time. The distribution of the two variants is slightly different, with strip bracelets mainly along one military road and solid bracelets mainly along another (fig. 218) though they do overlap to a certain extent. If these roads were sites of concentrated activity at slightly different times (see crossbow chapter), and the bracelets are chronologically separated, this might be the pattern resulting. On the other hand it could reflect a spatially different source area for the two types, whether or not they were produced at different times.

## 3. Intra-provincial groups

Bracelet types also occur at an intra-provincial scale in some even smaller groupings. Strip bracelets with b13 decoration only occur within Raetia in a small cluster on the limes, and snakeshead bracelets with type 28 terminals in another area around Altenstadt and at the hook of the Rhine. Similarly in Britain, a number of regional groups within the province can be identified. The close resolution of inter-provincial variability is undoubtedly due to the large numbers studied from this province, and it is likely that, were more available from Raetia and other provinces, a



finer resolution might be possible for these areas, though the Danube provinces in particular are heavily militarised so there is likely to be more movement connected with the army which will obscure regional patterns (see below). There are four main patterns of concentration in Britannia though some bracelet types such as a13, b15 etc. have a more general southern distribution.

1) South west e.g. a34.

2) East Anglia/east coast e.g. g2. (Cool 1983 group XXIX, map 5.6)

3) Cool's so-called 'Jurassic way', from East Anglia down into Hampshire e.g. a5, (Cool group XXII subgroup A, see map 5.4) a14.

4) Central southern following the road from east to west (e.g. multiple motif bracelets with motifs D and G)

The first two are quite small regional zones, whereas the others are distributions which seem to be based largely on the road network. Cool (1983, 216) says that workshops in Britain were producing the same types of bracelet in this period, though she does note that faint suggestions of regional production also exist (180) and discusses various regional trends. Since her database for Britain is much larger, some of the same groups are shown more clearly, as noted above, but she does not give a spatial distribution for all types.

Cool (1983) also studies other material which shows similar spatial patterning. Pin group XIX with projecting ring heads, for example, most probably dating to the fourth century (85), are found in a linear distribution across central southern Britannia, following Roman roads (map 4.6) though in this case there are significant finds in Ireland and Scotland also and it is suggested that these pins originate in Ireland (85) moving through Britannia along the central/southern road network. Cool also shows other distinctive regional groups occurring in pins and rings mostly in the first and second centuries - following the so-called 'Jurassic way' distribution running from East Anglia across into Hampshire (Cool 1983, 239, 342), and the south western distribution (342).

The most likely explanation for the distribution of types within Britain is that the very local ones at least show the marketing zones of regional workshops, as Cool suggests (Cool 1983, 343), though these must be catering to localised style preferences, which seem to be of some duration, and which should be discussed in their own right (see final chapter). The distributions which cover larger distances seem to follow trade routes. In some cases these bracelets reach the Continent in appreciable numbers. In the case of multiple motif bracelets with motifs D and G it is interesting that the distributions do not move much off the main line of the road, but that once they reach the Continent, they are spread in a wider area. Following Cool the explanation could be that these bracelets were manufactured somewhere in the south west and moved across the country on their way to the Continent. Of course other types found throughout Britannia are likely



to have been moving along the same roads, and it is problematic why some types should stick to the linear pattern closely while others which cover the same area are more widespread. The so-called 'Jurassic Way' distribution is obviously long-lived. Whether the workshops responsible for the bracelet types concentrated along the road network were also making very localised styles and the styles found throughout the province is an interesting question. Certainly the multiple motif bracelets with motif G, found in central/southern Britain around the line of the road, are counterbalanced by other multiple motif bracelets found more widely. Generally the linear distributions based on trade routes running east-west suggest that trade is an important factor in any distribution. It seems that many types were not popular in the areas away from the roads and main towns, though the problem cannot be one of supply since some types have quite a widespread distribution in the south. More provincial areas in the countryside perhaps relied to a greater extent on local workshops for other more individual styles, for example the strip bracelets with cut-out sun motif which are quite unusual and only found in the south of Britannia.

#### 4. A minority in a different area

Some bracelet types are clearly popular in more than one adjoining province and are probably moving from one area to another rather than being produced in both (close similarity of cross-section, fastening detail etc., as well as decoration, will imply production in one place). The clearest example of this is the distribution of bracelets with a multiple motif pattern. They are found throughout Britannia, Belgica, Germania and Lugdunensis, though there is a notable absence in part of Germania Inferior. Details of technique and decorative motif confirm that most of these bracelets are related to one another, and bracelets identical in every respect are found on either side of the Channel (m40, m46). Identical bracelets are in fact very rare, and in this sample of 109 bracelets there were 99 different individual patterns. By far the greatest numbers occur in Britannia, particularly in the south west.

There is overwhelming evidence that they were produced in Britain. They are a very common type in this province (see examples catalogued by Cool 1983, 924-953). They occur only singly or in pairs at sites on the Continent (apart from Krefeld-Gellep) whereas sites such as Lankhills, Winchester and Colchester have large numbers at the same site. Many of the motifs which make up the patterns on these bracelets can be paralleled on other bracelets which are found predominantly in Britain (for example, strip bracelets with b6 and b15 decoration). Cool (1983) studied multiple motif bracelets found in Britain in some detail, concluding that highly similar bracelets (with similar terminal type and decorative motifs) were more likely on the same site than on disparate sites (189) indicating that they were likely to have come from a local workshop. This could suggest that there was more than one workshop making this type of bracelet. Cool says that individual motifs occur throughout the century, and considering the 30 bracelets in my database which have datable contexts within the fourth century, there seems to be no stylistic drift between those occurring in early (300-350 A.D.), mid-late (350 -70 A.D.) and late (370 -415 A.D.) contexts, with some motifs appearing in all three phases. Stylistic differences are therefore not a result of patterns changing over many years, though of course it could also be



the case that consignments of bracelets were sent out to different areas at different times, the bracelets all sent out at one moment being more similar to each other than those produced and distributed later, and the timespans involved being too short to be visible archaeologically. Considering the other option, that of a number of local workshops making this type of bracelet, certainly two identical bracelets on the same site will not necessarily suggest a local origin, as it is more than likely that they reached this site together and could therefore have come from anywhere, especially if they occur in the same grave. The identical multiple motif bracelets occurring in my database are mostly found either at the same site or at sites close together, only two pairs being more widespread, with one of each pair on either side of the Channel. Identical bracelets on nearby sites, rather than on the same site, are possibly more suggestive of a local origin, particularly if they are slightly unusual when compared to other multiple motif bracelets. M24/m24a are good examples; the former is found at Lankhills (Clarke 1979, SF 370) and the latter at Silchester (Cool 1983, fig. 65 5); m24 is also clearly related to m25, also found nearby at Shakenoak (Brodrigg 1971a, I 12). This could be taken as evidence of a fairly local workshop responsible for the production of all these bracelets.

Considering those found on the Continent, at Krefeld-Gellep three occur in grave 594 (one of these is shown in fig. 192), one in grave 3007 (fig. 191) with other unsourcable bracelets, one in grave 1274 (Pirling 1974) and one in grave 1335 (Pirling 1974). None of these graves have any other bracelets which could be classified as distinctively British and grave 3007 contains a 4-strand cable bracelet with wrapped terminals which originates in the Danube area (see fig. 189). Altogether, bracelets with multiple motifs occur on 19 sites on the Continent. Apart from Krefeld-Gellep grave 3007, only one grave context with these bracelets had another bracelet whose possible origin could be suggested: grave 392 at Chartres (Chartres Maison d'Archéologie unpublished). This grave contained, in addition to two identical multiple motif bracelets, a 4-strand hook and eye bracelet. The exact details of the terminals are not known, for example whether there was originally a wrapped terminal, but both wrapped and unwrapped terminals of this type can be sourced to the Danube, the former to Raetia and the latter to Pannonia. Six of the sites with multiple motif bracelets have other types which are probably British: Vron, Tongeren, Chartres, Amiens, Trier and Luxembourg. Only those from Tongeren and Vron came from grave contexts, and were not found in the same graves as the multiple motif bracelets. Thirteen sites do not have other British bracelets; most of these are military sites. Bracelets or other jewellery which has become removed from the area where it was produced (the area where it is otherwise exclusively or predominantly found) can usually be shown to occur in groups at the same site, quite often with more than one bracelet or bead type, etc. from the same 'foreign' source in the same grave (see below and beads chapter). The sites usually have military associations. The most likely explanation for bracelets with this kind of patterning at sites is that they have travelled directly with the wearers, probably as a result of troop movements. Multiple motif bracelets, however, do not seem from the evidence available to be definitely moving as a result of their wearers travelling with the army. Most are the only British bracelets at a site; on the other hand,



many of these sites do have military occupation. They may have moved with people, or been actively traded from Britain to the Continent.

The occurrence of certain distinctive motifs was examined and it can be seen that bracelets with motifs I and E are biased towards East Anglia/Hampshire whereas H is has a more scattered distribution, noticeably absent in central southern Britannia, and F and G have a central/southern distribution (see above). Motifs F and G often occur together on bracelets (12 examples). Motif F does not occur on bracelets with motifs E and I but motifs F and H do occur on one bracelet together. Motifs F, G and H occur on bracelets on Continental sites. It seems possible from this evidence that there were at least two workshops making these bracelets, one perhaps based in East Anglia and one with a less specific southern location, some of the bracelets produced in this workshop making their way to Germania and Belgica.

Other bracelets which have a distribution in Britannia and the adjacent Continental provinces may also be considered here. Bracelets with type 1 snakeshead terminals are also distributed in Britannia and Germania Inferior. Snakeshead bracelets with type 1 terminals are not all identical, but the actual terminal itself is very closely similar on all examples, and all the bracelets have other points of appearance in common. Four also have multiple motif decoration: Lankhills, Clarke 1976, grave 396; Canterbury Marlow excavations, Blockley et al 1995, no. 371; Canterbury Stour street; Canterbury Archaeological Trust unpublished, no. 312, Tongeren, Liège Musée Curtuis 1/0510; the others are undecorated. One bracelet has imitation cabling, multiple motif decoration and snakeshead terminals of type 1 (see fig. 293) (Lankhills, Clarke 1979, grave 396 SF 502). Two other bracelets have imitation cabling included within the multiple motif decoration: bracelets from Rochester (Cool 1983, fig. 50 2) and Shernbourne (Cool 1983, fig. 82 1). Both of these bracelets also have snakeshead terminals, in this case both unique designs. There are four other bracelets in my database with multiple motifs and snakeshead/penannular terminals, at Upper Upham (Cool 1983, fig. 91 2 and 3), in Winchester, at Lankhills ( Clarke 1979, SF 456) and in northern France (Moreau collection, St.Germain-en-Laye, general inv. no. 38226), though these do not have imitation cable decoration or type 1 terminals. If the distribution of multiple motif bracelets with snakeshead terminals is plotted, they fall mostly in southern Britannia with some also across the Channel. The relationship of these features suggests that bracelets with several of them probably have a common origin, from the same workshop in southern Britannia, and seem to have a restricted distribution where they occur in Germania Inferior.

Some types of bracelets have a distribution in Britannia and Belgica; these are b3 and e2. The latter occur in too small a number on the Continent to suggest that they were traded to this area, and each type's association in graves or at sites with other possibly British types suggests movement of the wearers rather than traded bracelets. B3 has a rather peculiar distribution; though bracelets of this type skirt this area, there is a notable absence within Germania Inferior. The b3 example from Oudenburg is discussed further below.

There are two points to be made here. Firstly, it is possibly significant that bracelets made in southern Britain seem to reach some areas of the Continent with greater ease than they do sites in northern Britain, though my database admittedly does not cover very many sites in this



area. The investigation of more sites in the north might resolve this, but whether or not it is found to be the case, it certainly seems that material moved across the Channel fairly frequently, whether traded or with the wearers of bracelets. Secondly, bracelets which do reach the Continent in some numbers apparently do not reach areas of Germania Inferior which might be expected to be easily accessible, such as the region between the Meuse and the stretch of coast north of Boulogne (bracelets with multiple motifs) or the whole of this province (those with b3 decoration).

Other bracelets which have a strong group in one area and a few in an adjacent region may also be examined; this pattern occurs quite frequently for bracelets found in the Danube provinces. Snakeshead bracelets with type 18 terminals are found in greater numbers at sites in Pannonia with fewer in Noricum and around the border with Noricum in Raetia. Some types have more obvious movement from one province to another; for example, most Pannonian snakeshead bracelets occur in the same grave or at the same site in cases where they occur outside Pannonia, suggesting that they have travelled with the wearers. Snakeshead bracelets of type 93 are distributed in Pannonia (with more than one at each site) and along the Danube limes, occurring at Lauriacum in grave 32b and grave 16a (Vetters and Karnitsch et al. 1960). Other Pannonian snakeshead bracelets are also found at this site, two bracelets with type 23 terminals also in grave 16a, and another in grave 67 (there are another two from Lauriacum in Schicker 1933 Abb. 65); a snakeshead bracelet with type 36 terminals in grave 80; and one with type 44 terminals (square ends and two punched circle and dot motifs) in grave 43 (all Vetters and Karnitsch et al. 1960). There are also two hollow penannular bracelets at Lauriacum (from different contexts, Schicker 1933 Abb. 63, 65). Künzing, Grünwald and Neuburg also have several Pannonian types; for example, Keller (1971, Taf. 50 8) shows a snakeshead bracelet with type 93 terminals from Kunzing. At Grünwald there are two bracelets with type 87 terminals (Keller 1971, Taf. 29 7, 10), and a bracelet with type 55 terminals (Keller 1971, Taf. 29 3). Neuburg has one snakeshead bracelet with type 36 terminals in grave 106 and a hollow penannular bracelet in grave 10 (Keller 1979).

It is conspicuous that these sites are on the Danube limes and the distribution can probably be accounted for by movements of people along the frontier with the army.

Distribution of some types of bracelets are found purely in the areas of high military activity along the limes - snakeshead bracelets with type 93 terminals have already been mentioned above. Penannular bracelets with lines across the terminals are found in Pannonia and along the Rhine limes as well as at Canterbury, where fragments of one or more bracelets with wrapped terminals from the Danube area have also been found, not to mention the possibly foreign Stour Street burial group (Swift 1994, 59).

Hollow penannular bracelets are found on the Pannonian and Danubian limes. Strip bracelets with b2 decoration occur along the line of the military road in Raetia and on coastal military sites in Britain, one also being found at Canterbury. Penannular bracelets with tapered ends are distributed in Pannonia and Raetia, along the upper Rhine limes and in Germania on military sites such as Oudenburg and Tongeren. Examples west of the Rhine perhaps have



slightly later date ranges than those in the Danube provinces (77), which could suggest they are moving from east to west. Not many of the above types of bracelets were found in grave contexts (or the contexts are no longer known) and of those that are grave finds, other bracelets in the graves do not seem to be anomalous for the province in which they occur. However none of these types of bracelet have a strong concentration in one area. Again it may be assumed that distribution of such items is as a result of troop (and camp-follower) movement on the limes and to other military sites, but the origin of the wearers is more problematic. Cool (1983, 341) notes one type of pin found in Britain which has a distribution purely on military sites. The fact that some types of objects have a military distribution while others are found on both military and civilian sites might be accounted for by the supposition that the objects found only along the limes, for example, might have an origin in some place outside the study area. It might also be a possibility that there developed a specific 'military culture' though since some bracelets occur both on the limes and off it this seems unlikely, at least as far as women are concerned.

There does not seem to be much movement the other way, west to east, in the Danube provinces; snakeshead bracelets with type 10 terminals are found in both Raetia and Noricum but although they are a popular type in these provinces they do not reach Pannonia. Some bracelets have a more even Danubian distribution, such as wire bracelets with threaded beads. It is likely that these originate in Raetia or Pannonia given that they share the same type of fastening as 4-strand and 2-strand cable bracelets with wrapped terminals, which are found in these two provinces respectively. Hollow bracelets are found in all the Danube provinces and are possibly made in more than one place, with Pannonia the likely origin for hollow penannulars and those with fixed fastening.

Some types which reach Belgica and Germania from Britannia have already been discussed, above. Others which also have their strongest clusters in Britannia reach sites further afield. Bracelets with twisted square section predominate in Britannia and on the Continent are found on a couple of sites across the Channel and also down the whole of the Rhine limes; some also reach Raetia and Pannonia. This is another example of material which seems to have a predominantly military distribution outside its likely province of manufacture. Undecorated bracelets with expanding fastening are also found in similar areas: Britannia, immediately across the Channel, and down the limes.

The types of bracelets found in the study area can be compared with those occurring beyond it by using the work of Budja (1979), who studied metal bracelets found in Roman graves in Slovenia. Many of the same types can be seen to reach these areas, especially those found in Raetia and Pannonia - for example snakeshead bracelets with terminal types 10, 42 (particularly numerous), 93; strip bracelets of type b13, cable bracelets with wrapped terminals (see Budja 1979, Tafeln 2-5). This shows that the distributions as represented here cannot be taken as discrete and other data may extend the distributions of some types if the study were extended to the whole of the Roman west.



It has been demonstrated above that 'foreign' bracelets outside the main cluster also often appear at the same site or in the same grave confirming that they were not manufactured locally. Some sites can be directly linked to one another by the presence of several such bracelets. The best example is the link between the two sites of Portchester Castle (Cunliffe et al, 1975) and Oudenburg (Mertens and Van Impe, 1971) on the Channel coast. At Oudenburg there is a cogwheel bracelet in grave 78, reproduced here in fig. 151 (definitely a British type, see fig. 163, and occurring at Portchester Castle, no. 42 595), together with a bracelet with b12 decoration, and a snakeshead bracelet with type 1 terminals in the same grave. B12 decoration is not common but is linked to a number of other bracelet types found in Britain. The only other site with an identical bracelet is Portchester Castle (no. 34 2404) - see fig. 228. Snakeshead bracelets with type 1 terminals also originate from Britain (see links with multiple motif bracelets above and fig. 215). Similarly the bracelet with a19 decoration found in grave 4 at Oudenburg is paralleled only at Portchester Castle (31 1970). A common British type, a bracelet with bead imitative decoration, occurs in grave 216 at Oudenburg, with another British bracelet with b3 decoration (reproduced in fig. 179). Finally twisted square sectioned bracelets occur at both sites (Oudenburg grave 67; Portchester no. 25 306, 27). This type is also predominantly found in Britain. Since British bracelets not only correspond very closely in the types found, but also occur in groups together in graves at Oudenburg, it can be concluded that a number of people originating from Portchester or the immediate area moved to Oudenburg and took their personal ornaments with them. The bracelets could have been traded, but this does not seem very likely. Cogwheel bracelets, for example, do not reach any other Continental sites. Bracelets with b3 decoration are found elsewhere on the Continent but similarly in graves with other British material, and not in large numbers. Bead-imitative bracelets are rare outside Britain. None of the British types found at Oudenburg have a wide spread on the Continent which would be persuasive of trading links. This is quite a rare example of personal ornaments enabling a precise movement from one area to another to be traced.

If some of the other sites with outliers are examined, these may give a more general impression of movements from one area to another. The site of Augst (Riha 1990) in Sequania is a case in point. This site shows a strong occurrence of types generally regional to Britannia/Belgica; a multiple motif bracelet (no. 2875), two strip bracelets with b1 decoration (no's. 2796 and 549), a strip bracelet with b3 decoration, (Taf. 78 2975), and ones with a8 decoration, (Taf. 70 2884), and a5 decoration, (Taf. 19 538); a bracelet with imitation bead decoration, (Taf. 19 541), and a strip bracelet with b47 decoration (Taf. 66 2798). Two of these, with decoration b1 and b47, occur in the same grave (grave 2798). Most of the others are not from grave contexts. Such a large number of different types, which are not found in the surrounding areas in any significant numbers, probably represents the arrival of different people at this military site. Another bracelet from here with decoration related to that on British buckles and belt fittings will be discussed in the final chapter.



Strip bracelets with a10 and related decoration are found in Britannia and also on quite a few military sites in Raetia, and at three of these sites they are found together in graves and/or with other likely British bracelets in the same grave. At Lauriacum, a strip bracelet with a10 decoration is found in grave 32b with a strip bracelet with a2 decoration (Vetters and Karnitsch et al. 1960). At Eining strip bracelets with a4 and a8 decoration were found, but possible grave contexts are not known (Keller 1971 Taf. 47 2 and 4). It therefore seems likely that again the presence of these bracelets in Raetia is due to army movements.

Another site with a large number of foreign bracelets, this time mostly from the Danube provinces, is Krefeld-Gellep on the lower Rhine. These are 4-strand cable bracelets with wrapped terminals from Raetia (Pirling 1989, grave 3007); a hollow bracelet (Pirling 1989, grave 2972 10); a strip bracelet with b13 decoration (Pirling 1989, grave 2985); and snakeshead bracelets with type 31 terminals (Pirling 1974 grave 1492). Another fragmentary bracelet with wrapped terminals, number of strands not known, occurs in grave 3203 (Pirling 1989). Hollow bracelets are most popular in the Danube provinces. B13 decoration is otherwise found only at Tongeren and in a small regional cluster in Raetia. Type 31 terminals only occur in Pannonia apart from this example at Krefeld-Gellep. Other sites occasionally have a single bracelet which definitely comes from another area, such as the snakeshead bracelet with square end and two punched circle and dot motifs found in St. Albans (Wheeler and Wheeler 1936), which undoubtedly comes from Pannonia. (The bracelet is given a context date of 200 A.D. in the site report, but this is almost certainly wrong.) The hollow bracelet from Chartres (Chartres Maison d'Archéologie s.765 C77.7382.3) may be from the Danube area as these bracelets are much more frequent there than they are west of the Rhine. It has very unusual decoration paralleled only in this database by a single example at Göggingen in Raetia (Keller 1971 Taf. 9 3 ). These bracelets are shown in fig. 228. The 4-strand cable bracelet from Chartres sép.392 C.73.4224.1 (see above) almost definitely comes from the Danube provinces; links with Pannonia are already suggested for this site from the bead distributions (see previous chapter).

Tongeren also has several bracelets which can be sourced to Raetia/the Danube area: a bracelet with threaded glass beads (Vanvinckenroye 1984, grave 37 4) which occurs in the same grave as a bead necklace containing a blue hexagonal cylinder bead, also with a likely origin on the Danube (see beads chapter), and two with b13 and b16 decoration respectively (Gallo-Romeins Museum Tongeren, 2618, Vanvinckenroye 1995b, plate VII 32e).

Finally, although graves which Clarke thought to be Pannonian are found to contain bracelets of British type and no Pannonian types, Clarke's suggestion, on the basis of the many bracelets worn on the left wrist (Clarke 1979, 334-6), is supported by the differential positions of the bracelets on the arms of women and juveniles. A large number of bracelets are worn on the left wrist in the juvenile graves and fewer in those of adult females, which custom is also found in Pannonia on some sites such as Somogyszil (Swift 1994, 55-60). The bead evidence from the previous chapter, and Guido's notes on the coral and carnelian beads found in these graves (Guido 1979, 295), also suggest a Pannonian origin. Here it can be seen that foreigners did not always retain all the material culture from their place of origin and that the presence of travellers

may therefore not be possible to detect through objects alone. Similarly, bead-imitative bracelets found on two sites in Pannonia, which have a strong regional group in Britannia, occur in two graves at Somogyszil (Burger 1979, grave 75 5, grave 129 4, the latter reproduced in fig. 151) buried with the same rite of many bracelets on the left arm as the other graves in the cemetery, so if the wearers are ethnically British, they may have adopted the local practice. This will be further discussed in the final chapter.

## SUMMARY

Bracelet styles clearly show spatial divergence, and they are produced in many different places which helps to account for the extremely large number of types produced, though most of these fit into a smaller number of distinct regional trends. Inevitably very precise results are only obtained for those provinces with the largest samples of bracelets. It is suspected that with more data regional groups in each province would become more pronounced. Certainly many minority types which only occur very small quantities of about three bracelets, e.g. type 105 (fig. 219), nearly always cluster together suggesting that they would also form clear regional groups were more bracelets studied. The pattern established for Britannia in particular, and indicated for some other places, is complex, that of regional patterning ranging from small local clusters through larger linear distributions and distributions covering whole provinces to groups of associated provinces. Some areas seem to have a lack of material which is difficult to account for. From the evidence of cable bracelets it can be seen that types which are popular everywhere are probably made in a number of different places and that there is no long-distance trade in these items. Most bracelets present outside the main clusters can be convincingly explained as resulting from the movement of the wearers and this is found to be most strongly associated with the army.



**CABLE BRACELETS MADE FROM STRANDS OF TWISTED WIRE**

3-strand cable bracelet with hook and eye fastening.

2-strand cable bracelet with hook and eye fastening.

4-strand cable bracelet with hook and eye fastening. The area immediately behind the fastening is enclosed in sheet metal, with a cuff at each end of the wrapped section.

2-strand cable bracelet with hook and eye fastening. The area immediately behind the fastening is enclosed in sheet metal, with a cuff at each end of the wrapped section.

3-strand cable bracelet with 2-hook fastening.

2-strand cable bracelet with 2-hook fastening.

**STRIP BRACELETS WITH RECTANGULAR OR D SHAPED CROSS SECTION**

b31 & related: strip bracelet, often quite wide, with elaborate decoration; small punched circle & dot motifs with borders of transverse grooves bounded by horizontal lines. Occur both with hook and eye fastening (often with raised circular block), and as penannular bracelets.

Rosette motif: strip bracelet with circle and dot motifs surrounded by small dots to form a rosette. Sometimes with a border of transverse grooves bounded by horizontal lines. Occur both with hook and eye fastening (often with raised circular block), and as penannular bracelets.

h3, h4 and h5: strip bracelet with a continuous wave motif, within a border of transverse grooves bounded by horizontal lines.

c2/5: transverse grooves enclosed within a border of horizontal lines.

a2: narrow strip with transverse grooves.

e2: engraved lines to form a zig-zag pattern with alternate triangular notches.

d6: chevron effect notches along the edge of the bracelet with a central horizontal groove.

g2: alternating plain blocks and bands of hatching.

b10: alternating plain blocks and bands with circle and dot decoration and parallel edge

notches.

b5/23: single punched circle and dot motifs separated by incised lines.

b3: notched along edges to form a raised zig-zag, superimposed punched circle & dot motifs.

b1: punched circle and dot motifs in a single row.

b2: punched circle and dot motifs in a single row, enclosed in a border of horizontal lines.

b13: scalloped edges with punched dots and central horizontal groove.

Sun motif: strip bracelet with a border of horizontal lines and transverse grooves. Large cut-out circles with notches radiating from the edges alternate with pairs of smaller cut-out circles.

a39: notched along edges to form a raised zig-zag, superimposed transverse grooves.

a10 & related: notched along edges to form a raised zig-zag, blocks alternate on either edge.

a8: alternating bands of diamond motifs (formed by cutting away the corners from rectangular blocks) and transverse grooves.

a34: ribbed bracelet with added strips of sheet bronze wrapped around at intervals.

a14: alternating plain sections and transverse grooves.

a13: alternating plain sections with notched edges, and transverse grooves.

a5: triangular notches to form a zig-zag pattern.

a1: alternate notches.

Multiple motif bracelets: with a symmetrical pattern of blocks with varying motifs.



## **PENANNULAR SNAKESHEAD TERMINALS**

42. knobbed ends.

31. knobbed ends with punched dots.

36. flat ends with two pairs of parallel notches.

55. bead imitative ends.

93. flat splayed and grooved ends.

23. flat splayed ends with two or more punched circle and dot motifs.

18. flat ends pinched in behind two parallel grooves running from the end of the bracelet.

28. diamond shaped ends, sometimes with two punched eyes.

105. diamond shaped ends with notches along the edges.

10. herringbone pattern, strip and solid bracelets.

12. flattened ends with a cross motif, quite variable in appearance.

1. punched circle and dot motif at ends, the front edge of each terminal is flattened and decorated with a row of punched dots, there are several engraved lines behind this area.

## **OTHER SOLID BRACELETS**

Undecorated solid bracelets made from a strand of twisted wire with an expanding fastening.

Undecorated solid penannular bracelets with round, oval or D shaped cross-section.

Undecorated solid penannular bracelets with tapered ends.

Undecorated bracelets with twisted square section.

Cogwheel bracelets: strip bracelets with the narrow edge uppermost, with cut-out sections.

Solid bracelets with a bead imitative pattern (long 'bead' separated by several short 'beads').

## **HOLLOW BRACELETS**

Hollow bracelet made from rolled sheet metal, undecorated, with penannular terminals.

Hollow bracelet made from rolled sheet metal, with transverse grooves at the penannular terminals.

Hollow bracelet made from rolled sheet metal with fixed fastening; undecorated.



## CHAPTER 5: BUCKLES AND BELT FITTINGS

The first comprehensive survey was carried out by Bullinger who collected the late Roman bronze belt fittings in the possession of major museums in Europe (Bullinger 1969, 75). However, the emphasis is on elaborate/chip-carved belt sets, and the reconstructed appearance of the belt.

Simpson (1976) classified simple buckles and mentions some regional variety in distribution. Penannular or concave loops and triangular buckle plates are said to be Hungarian or Austrian (193,196). Simpson's Groups III and IV have a distribution confined to the more easterly provinces (198). Despite this clear regional patterning, Simpson concluded that since buckles are often associated with crossbow brooches in graves, they were probably made in a state factory in Pannonia or Illyricum and formed part of military uniform of the second half of the fourth century.

Hawkes and Dunning (1961) constructed a typology of animal ornamented buckles and related belt-fittings, as part of a catalogue of such items found in Britain. Some types were suggested to be unique to Britain, for example type IIA (50-51) which has confronted dolphin heads on the loop, the tails making involuted terminals. A post-Roman development recognised by Hawkes and Dunning is type IIIB buckles, which never occur in datable fourth century contexts (36). Clarke (1979) also proposed that local workshops existed, suggested by such features as the number and positioning of the rivets on buckle plates varying among the provinces (270). For example, of the eight simple 3-part buckles from Lankhills, four have 3 rivets on the plate arranged in the same pattern, forming a lozenge shape with the base of the tongue. Decorative features are also thought to be specific to different areas (272), zig-zag lines with circle and dot motif is said to be a South Bavarian/Hungarian design, for example.

Böhme (1974) and Sommer (1984) cover the material in more detail for the Continent and Corney and Griffiths (forthcoming) do the same for Britain. Böhme (1974) studied 4th century material occurring in grave contexts between the Elbe and the Loire in what has become a standard reference work. He separates buckles and their related plates and other fittings into wide belt sets with many pieces and smaller sets comprised of just the frame and plate. Wide belt sets are split into two groups, type A composed of five pieces (55) and type B of three pieces with the buckle frame and plate now integrated into one piece (57). Böhme says that type A belt fittings which are earlier in date have a distribution predominantly on the Rhine and in Northern France whereas type B belt fittings mostly occur in the Eastern provinces of Pannonia, Noricum and Raetia (90) (however Karte 11 shows that there are also quite large numbers of type B belt sets west of the Rhine). All finds have an apparent concentration in the military frontier zones. The examination of decorative motifs occurring on the buckles and plates shows that many fall into regional groups with the same Rhenish/Danubian split (97).

Böhme says more generally that during Stufe I (originally given as 330-40 A.D. [Böhme 1974], more recently revised to end of the fourth/beginning of the fifth century [Böhme 1987]) and II (originally 380-420 A.D. [Böhme 1974], now redated to c.400-435 A.D. [Böhme 1987]) clear distinctions exist between Gallo-Belgic and Danubian production centres (97). Chip-carved belt



fittings are said by Böhme (1974) to have been produced in a few 'Imperial workshops' as they are more standardised, with recurring decorative details, and are technically more sophisticated (97). It is suggested that they may have been produced alongside weapons. Towards the end of the fifth century, Böhme suggests mainly local production, since buckles of Stufe III are much more diverse (97).

#### REGIONAL TYPES ISOLATED BY BÖHME 1974 IN THE RHINELAND and NORTHERN GAUL

Animal head buckle and plate sets with a tongue cross-piece

Niello inlaid animal head buckles and belt plates

Animal head buckles with deep triangular chip-carved casting

Punched decorated animal head buckles of Form Cuijk-Tongereren and Hermes-Loxstedt

Fixed plate animal head buckles of type Haillet, Trier-Samson, Krefeld-Gellep and Mainz-Greifengklausstrasse

Corney and Griffiths (forthcoming) will be the definitive study of British material. They show that most types of buckles and belt fittings found in Britannia cluster to the south-west, and that by far the most frequently occurring type are belt sets with horsehead buckles and very long, narrow plates and incised decoration (pers. comm.). This type does not occur on the Continent. There are no examples not found in Britain in Sommer (1984); nor are there any in my additional data collected for the Continent. Over 70% of British finds are around Cirencester. Dating evidence is scarce but there is an apparent increase in material from the mid 360s A.D. onwards, and it is suspected that the type continued to be produced into the fifth century.

Finally the most recent study, updating Bullinger's collection, is by Sommer (1984). He gives a catalogue of material from the whole of the Western Empire and beyond the frontiers in Germany. He develops a relative chronology on stylistic grounds (59) and connects this in with an absolute date range by means of association with cross-bow brooches (74). Some individual stylistic features are plotted on distribution maps and examined in conjunction with Böhme's chronological Stufe. Sommer follows Böhme by suggesting production in small workshops (102), and discusses the patterns as they develop chronologically through the 4th-5th century. There is little regional variety in Böhme's Stufe I, though some types are restricted to Gaul and others to the Danubian regions. In Stufe II, western, 'Gallic' and eastern styles are apparently distinguishable (103). However in Gaul and Raetia local groups are described with much smaller distributions, such as eastern Gaul (a particular type of propeller-shaped metal fitting with a violin-shaped central section, Karte 3) or the region between Vermand and Trier for 'angled belt fittings' (Karte 6). In Stufe III Sommer says that the former provinces of Germania II and Belgica II can still be distinguished by means of particular belt types, strap-ends and animal-head buckles (103).



SOMMER TYPOLOGY

Sommer (1984) divides buckles into three main groups based on the method of attaching the plate to the frame. A summary of the types is given below, with details given for variations used in the spatial analysis.

Sorte 1: A solid continuous frame encased by the plate on one side. The tongue is looped around the frame and accommodated by a rectangular section cut from the plate.

Sorte 2: The frame has open ends with posts at either end which interlock with similar posts staggered along one edge of the plate. A separate axle runs through these and the tongue is looped around its centre.

Sorte 3: The frame and plate are cast in one piece.

| table D  |                              |              |
|--|------------------------------|--------------|
| Sommer (1984, 19-40)   | Hawkes and<br>Dunning (1961) | Böhme (1974) |
| Sorte 1 Form A Typ A: oval or kidney shaped plate and round, D-shaped or oval buckle.                            |                              |              |
| Sorte 1 Form A Typ B: oval or kidney shaped plate and saddle shaped buckle.                                      |                              |              |
| Sorte 1 Form A Typ C: oval or kidney shaped plate and animal-head buckle (3 variations).                         |                              |              |
| Sorte 1 Form B: triangular plate with semicircular projections and round or D-shaped buckle (2 types).           |                              |              |
| Sorte 1 Form C Typ A: rectangular plate and D-shaped buckle (5 variations).                                      |                              |              |
| Sorte 1 Form C Typ B: rectangular plate and saddle shaped or oval buckle (5 variations).                         |                              |              |
| Sorte 1 Form C Typ C: rectangular plate and rectangular loop.  |                              |              |
| Sorte 1 Form C Typ D: rectangular plate and 2 animal heads confronted at the centre of the frame (6 variations). | IA, IB                       |              |

Sorte 1 Form C Typ E: rectangular plate and 4 animal heads, two confronted at the centre of the frame and two where the frame meets the plate. (2 variations).

Sorte 1 Form C Typ F: rectangular plate and two animal heads where the frame meets the plate.

IIIA

Typ Misery, Typ Cuijk-Tongeren, Form Hermes-Loxstedt, Form Wijster, Form Vereigenstadt.

Variation 1: curved frame, wedge shaped in cross-section or with a pronounced lip. The animal heads are quite flat.

1a: the plate is decorated with a central field surrounded by a decorative band. The field contains niello figures, punched circles, S shaped, star or flower motifs.

1b: the plate has a decorative border enclosing two fields with the same type of decoration as 1a above.

1c: a short rectangular plate without field divisions, undecorated, or with geometric chip-carving, triangles, flowers, circle and dot patterns or engraved bands.

1d: there is an unframed ornamental field with a central motif of a portrait medallion, circle and dot stamp, star or cross motif, etc.

Variation 2: characterised by a particularly broad and short plate. There may be a tongue cross-arm or double tongue. The animal head is flat, sometimes with a glass eye. Decorated with chip-carved or niello patterns.

Typ Herbergen

Variation 3: the buckle has a small frame and small almost square plate. The animal heads are grooved with plastic modelling and the frame is often ribbed. The tongue is simple and straight. The plate is



decorated with chip-carved tendrils and other plant motifs, with geometric decoration occurring less frequently. Some have an undecorated plate. The buckle may have niello decoration or punched stamps.

Variation 4: the plate is small, short-rectangular or trapeze shaped. The lion-head animal head terminals are either plastic with a hollow underside or flat on an otherwise rod-shaped frame. A bead imitative row decorates some frames.

4a: there are two fields with star shaped chip-carved ornament or with simple punched circle or cross patterns.

4b: a double row of S-shaped chip-carved motifs, circle and dot stamps, or triangles. Bead imitative frame.

4c: undecorated, or sparsely decorated. There may be circle and dot stamps around the rivets or small hanging motifs made up of circle and dot decoration dependent from the hinge side of the plate.

Variation 5: often very large or with a disproportionately sized buckle and plate.

5a: the buckle is very large and broad, the plate is small.

5b: the buckle and plate are both large

5c: the buckle has a flat undecorated frame and a particularly small plate.

Form Spontin

Sonderform Gunzburg: no chip-carved or niello decoration. Circle and dot or 'tremolierstich' stamps.

Sorte 1 Form D: buckles with D-shaped plate.

Sorte 1 Form E: chip-carved belt sets made up of many pieces. IVA

Sorte 1 Form E Typ A: two rectangular fields on the plate with ordered star, tendril, and pointed oval motifs, occasionally triangles or rectangles. Sometimes there is an ornamented band between the fields.

Sorte 1 Form E Typ D: the buckle ends in a triangular section with a chip-carved ornamented field and has animal head decoration. The field is either round or rectangular with a semicircular addition.

Sorte 1 Form E Typ B, C,F,G: see Sommer 1984 (31). IVB

Sorte 2 Form A Typ A: rectangular plate with two confronted animal heads at the centre of the frame.

Sorte 2 Form A Typ B: rectangular plate and rectangular, oval or saddle shaped bow.

Sorte 2 Form A Typ C: short and narrow rectangular plate with dolphin heads confronted at the centre of the frame, forked tongue and circle and dot decoration on the plate.

Sorte 2 Form B: rectangular, flat plate pierced with circles, keyhole shapes etc. (6 types).

Sorte 2 Form C: rectangular plate with a propeller-shaped end (3 types).

Sorte 2 Form D: rectangular plate with curved sides. IIA  
Animal heads extend from the frame. The tongue has curled projections at the sides (two types).

Sorte 2 Form E: figurative pierced plate.



Sorte 3 Typ A: rectangular plate and rectangular or oval buckle.

Sorte 3 Typ B: rectangular pierced plate similar to IIB  
Sorte 2 Form B.

Sorte 3 Typ C: rectangular or trapeze shaped plate.  
Twice pierced plate and bevelled or ribbed frame.

Sorte 3 Typ D: Martin's Typ Muids. Champdolent.  
Distinctive circle decoration and propeller-shaped end to the plate.

Sorte 3 Typ E: triangular plate, often with central section removed, with semi-circular projections.

Sorte 3 Typ F: buckles with a rectangular or trapeze- IIIB  
shaped plate and an oval frame with two biting animal heads where it meets the plate. Very small and short usually underlaid by a second plate for reinforcement. The oval frame is usually hollowed out on the underside. Mostly with punched decoration though there are a few with niello or chip-carving.

## REGIONAL TYPES SHOWN ON DISTRIBUTION MAPS BY SOMMER (1984)

### Stüfe I (Karte 1)

#### Rhineland and northern Gaul

Some types of lion-head buckles (Sorte 1 Form A Typ C Var.1, Sorte 1 Form B Typ D Var.1)

Some types of dolphin buckles with stick-axle hinge and rectangular plate (Sorte 2 Form A Typ C, Sorte 2 Form B Typ Sissy)

#### Danube provinces

Buckles with bow shaped frame and oval/kidney shaped plate (Sorte 1 Form A Typ B Var.1)

Buckles with rectangular plate decorated with portrait medallions (Sorte 1 Form C Typ B Var.2).

Buckles with rectangular frame, stick-axle hinge, rectangular pierced plate and double tongue (Sorte 2 Form B Typ Salona)

Ornamented plates with lock-shaped piercings ( Sorte 2 Form B Typ Sagvar)

Amphora shaped strap-ends with rectangular ends (Form B Typ A Var 4)

## **Stüfe II (Karte 2-6)**

### Gallia

Some types of buckles with plates which end in a propeller shape (Sorte 2 Form C Typ Champdolent and Remagen)

Buckles of Typ Muids (Sorte 3 Typ F)

### Between the Meuse and the Rhine

Belt fittings with 'hornlike' additions

### Between Vermand and Trier

Angled belt fittings

### Between Trier, Mainz and western Raetia

Buckles of Typ Folklingen

### Gallia/Italia ann.

Chip-carved strap-ends with griffin head terminals

### Rhine frontier

Propeller-shaped fittings with a violin-shaped central section

### Illyria

Some types of buckles with plates which end in a propeller shape (Sorte 2 Form C Typ Gala)

Separate propeller-shaped fittings with pointed oval decoration/circular additions to middle roundel

Chip-carved strap-ends with lion terminals

## **Stüfe III (Karte 7)**

### Germania II and Belgica II

Belt sets of Serie 2 Ausführung 1c



## SPATIAL DISTRIBUTION

Sommer (1984) does therefore show some distributions on maps for the more unusual types of belt fittings and for a few types of buckle with specific attributes such as 'lionhead' buckles (Karte 1-8). However, apart from those given above, the rest of his particular types and variations are not mapped spatially. The provinces in which they are found are referred to in the typological descriptions, and lists of sites where each type occurs are also given (fundlisten pages 121-158). I have used this data to construct distribution maps for the types occurring in my study area (Sommer covers the whole of the Western Empire in his study). Grid references were obtained only for sites within the study area, with the additional adjoining areas of France and free Germany given by Sommer. Sites used by Sommer are shown in fig. 229. Some grid references were not found; these are given in the table at the end of the chapter, as are sites outside the study area containing relevant material. Where I have come across additional data this has been added (fig. 230). For example, Sommer relies solely on Hawkes and Dunning (1961) for Britain, and does not use important sites such as Lankhills. The material used by him for the Continent is much more comprehensive and most of the sites added here by me are recently excavated unpublished material (e.g. Chartres, Lisieux, Vron, Nijmegen, Ilzach, Virton). Mapping the data shows clearly the regional distinctions clarified by Sommer, in particular the distinctions between the Danube area and west of the Rhine; my additional data fits the general patterns. Spatial plotting was also found to reveal a number of striking patterns not commented on by Sommer himself, especially for the different variations of Sorte 1 Form C Typ F. Types which fall predominantly outside my study area (this includes most types which have a bias to the east) have not been mapped, nor have types which have a rather wide variation within the type as it is unlikely that the map resulting would be useful. An example is Sorte 1 Form C Typ C (Sommer 1984, Taf. 4 2-8) – subdivisions within this group such as horsehead buckles with long rectangular plate have their own precise and spatially different distributions (Corney and Griffiths forthcoming, pers. comm.), and patterns would be obscured by a map of the type as a whole. The best results were obtained from the most precise variations listed by Sommer for some types. Maps are as the data dictates; for example Sommer gives lists for some variations together (e.g. Sorte 1 Form C Typ F variations 1c and 2).

### Sorte 1 Form A

A wide distribution throughout the study area (fig. 231). There are three distinct clusters, in the west of Belgica, along the limes close to the frontier in Germanica and Raetia following the line of the military roads from Augst to Salzburg and from Altenstadt to Neuburg-an-der-Donau in Raetia, and finally in large numbers in Pannonia. Additional data collected by me shows that types A and B do not seem to correspond with particular clusters (fig. 232). Unfortunately, although Sommer (1984) divides the form into more specific types in the typology, the different types are not specified in the fundlisten for this form. He does show, Karte 1, that some of these types have regional variants. My added data also shows a few more buckles of this type in Britannia than

given by Sommer (who lists one find at Silchester) at the sites of Lankhills, and Canterbury. Sommer gives an approximate date range of 290-400 A.D. for those occurring in the Danube provinces and 310-350 A.D. for those west of the Rhine.

#### Sorte 1 Form C Typ A

These belt sets are found predominantly in Pannonia and west of the Rhine, with a conspicuous absence in Raetia and Noricum, and only two examples in Britannia at Lankhills and Gatcombe (fig. 233). Sommer dates the type to the fourth century.

#### Sorte 1 Form C Typ B

This type is found in roughly the same clusters as Sorte 1 form A above (fig. 234), though the limes distribution is clear in Pannonia as well as Raetia (on the military road set back from the frontier) and Germania this time. There are no finds from beyond the frontier. Sommer gives a date range roughly spanning the whole of the fourth century.

#### Sorte 1 Form C Typ C

Sommer's data shows a distinct group in the east of Pannonia with only one outlier at Grafelfing. Additionally, I have collected three examples further west from Lisieux, Lankhills (one of Clarke's 'foreign' graves, gr.234, SF 279), and Canterbury (fig. 235). Sommer does not include this type in his chronological groups.

#### Sorte 1 Form C Typ E

All of these belt sets occur west of the Rhine except one example at Kelheim and a few beyond the frontier (fig. 236). Sommer dates the type to 364/70-407 A.D.

#### Sorte 1 Form C Typ F variations 1a and 1b

Distributed west of the Rhine, both along the frontier and further west, though there are no examples in Britain. A few cluster on the North Sea coast beyond the frontier (fig. 237). Sommer's date range is 364/70-407 A.D.

#### Sorte 1 Form C Typ F variations 1c and 2

A precise and limited distribution down the lower Rhine between Alem and Ludwigshafen-Rheingonheim and in a line at right angles to this between Krefeld-Gellep and St. Germain-les-Corbeil, for the first part following the line of the Meuse. There are also a couple in Britannia and a few on the North Sea coast (fig. 238). Sommer gives a date of 364/70-407 A.D.



### Sorte 1 Form C Typ F variations 3 and 5

Variation 3 has a similar linear distribution (fig. 239). (There are two outliers at Holbury and Wessling). Sommer dates this variation to 364/70-407 A.D. Variation 5 is shown on the same map to emphasise the clear spatial patterning. It is found east of this line for the most part, with a few finds in Germania I along the frontier. The date range is later, c.400-450 A.D. according to Sommer.

### Sorte 1 Form C Typ F variation 4a

Again found predominantly in Germania, on frontier sites along the Rhine, between Krefeld-Gellep and Heidelberg-Neuenheim, with a few finds further west (fig. 240). Sommer gives a date range for this variation of 364/70-407 A.D.

### Sorte 1 Form C Typ F variation 4b

This time the linear pattern runs east to west across Belgica (fig. 241). Sommer suggests a date of 364/70-407 A.D.

### Sorte 1 Form C Typ F variation 4c (and 5)

Variation 4c falls in the same line as 3 above, demarcating the zone where variation 5 occurs as before (fig. 242). It also has the same date range as variation 5 of 400-450 A.D. according to Sommer. There is one at Lankhills and also some finds beyond the frontier.

### Sorte 1 Form C Typ F Sonderform Gunzburg

As Sommer emphasises (Sommer 1984, 27), this belt set type is made in a slightly different way, and occurs only on the frontier line or in free Germany just beyond the frontier, with a different pattern of find spots to the buckles crossing the frontiers above (fig. 243). No date range is given for this type.

### Sorte 1 Form E Typ A

Distributed along the Rhine limes as far as Worms with a cluster further to the west in Belgica. There is one find in Kent in Britannia. Finds in the Danube provinces also seem to be along the line of the frontier (fig. 244). Sommer places some buckles of this type in his second chronological group dating to 364/70-407 A.D. west of the Rhine and 380 - early fifth century along the Danube.

### **Sorte 1 Form E Typ D**

A more scattered distribution around the limes, with the same date range as before. (fig. 245).

### **Sorte 1 Form E all types**

The pattern for all types shows that, while they are found throughout the study area (with, however, only three finds in eastern Britannia), the examples in the Danubian provinces occur on the frontier line only in Pannonia, and along the line of the military road only in Raetia. There is also a scattering of material beyond the frontiers (fig. 246). Date range as before.

### **Sorte 2 Form D**

Although Sorte 2 are found mostly in the east outside the bounds of this study, Sorte 2 Form D do occur in small numbers west of the Rhine. Sites in Britannia in the extreme south are High Down and Bifrons (both Saxon sites). There is also one in Pannonia (fig. 247). No date range is specified by Sommer for this form.

### **Sorte 3 Typ F**

Typ F is found in Germania Inferior and Belgica with quite a few finds in northern Germany also. There is a noticeable concentration on the frontier between Kastel and Rhenen, and a few finds in Britannia towards the east (fig. 248). Sommer gives a date range spanning the fifth century for this type. He refers the reader to Böhme (1974) for types 'Haillot', 'Trier-Samson' and Krefeld-Gellep, which fall into type F (Karte 16). All occur predominantly in Germania Inferior and clustered around an area of the North Sea coast. Typ Krefeld-Gellep also occurs in Britannia on the East coast.



## DISCUSSION

The distributions above fit into the patterns suggested by Sommer and Böhme of increasing spatial variability with time, and clear distinctions between belt sets produced west of the Rhine and in the Danube provinces. There are some obvious links between styles current in different areas. For example, buckles with a separate hinge bar, two dolphin heads confronted at the centre of the frame, and a pierced openwork plate are found throughout the Western Empire. However, each area has a slightly different interpretation of the same motif, with, for example, buckles found in Britain having a regional variant with a curled tail to the dolphin which interlocks with side pieces on the tongue of the buckle (Sommer 1984, 35, Sorte 2 Form B Typ Colchester) and buckles found in the Danube area often having a double tongue and bevelled plate (Sommer 1984, 34, Sorte 2 Form B Typ Salona). Another example would be propeller shaped metal fittings which are fairly distinctive and widespread but show some regional variation in form and decoration (Sommer 1984, Karte 2-3). Such designs seem to be conforming to a general specification or fashion and would be recognised by the casual observer as belonging to the same repertoire. Other types are more individual and are only found in one province, for example horsehead buckles with long rectangular plate occurring only in Britannia, or buckles with a rectangular frame and plate (Sorte 1 Form C Typ C) found in Pannonia (notably not on the upper Danube limes) and Dalmatia (examples here are not mapped, see table E, 115). Other metal fittings of various idiosyncratic types are also shown by Sommer to have localised distributions. The general proliferation of individual types and styles of buckles, plates and other attachments shows that there are obviously not the same restrictions on this object as is found for the crossbow brooches, which also have military associations (see chapter 2). Leahy (1996) says that the horsehead buckles (Hawkes and Dunning 1961 type I) occur far more often in civil than in military contexts. However, Hawkes and Dunning (1961) type II (Sommer Sorte 2 dolphin head buckles, as discussed above) apparently have a more probable military association (23). It could be the case that some of the types found only in one province, such as horsehead buckles, which do not have an association with military sites, are not military items of dress, whereas those which have a universal distribution, or which show variants which would still be recognised as having a common origin, are more likely to be military items. This would follow the need for a certain conformity by any items of dress which are part of a uniform (see chapter 1).

Chip-carved belt sets are immediately distinctive through their size (made for very wide belts) and characteristic form and decoration. They have a generally widespread distribution and a strong association with military sites (Böhme 1974, 90), confirming that these at least were at one time an item of military dress as shown in the *Notitia Dignitatum* (Böhme 1974, 97). Fig. 246 shows that presence on sites on the Rhine frontier and on the Pannonian Danube frontier was strong. The fact that chip-carved belt sets (dated by Sommer to 380-early fifth century in the Danube region and 364/70-410 A.D. in the Rhineland and northern Gaul, Sommer 1984) are found only on sites along the military road set back from the limes in Noricum and Raetia perhaps suggests that the actual line of the river was less important defensively by this date, or that there was at least considerably more activity on the military road than on the frontier itself. This



correlates with the general trend in the late Empire towards fortifications behind the frontier line rather than on it (e.g. in Pannonia, Lengyel and Radan 1980, 223; in Raetia, Garbsch 1988, 106). It is notable that in Pannonia, while other types of buckles are found both on the frontier and within the province (e.g. Sorte 1 Form A, Sorte 1 Form C Typ B), chip-carved belt sets (Sorte 1 Form E) only occur along the Danube frontier line here, showing their continued military significance (they may have been worn only on military sites in Raetia and Noricum as well, but with such a paucity of civilian evidence from these provinces the case cannot be argued). The larger numbers of finds in Gallia and wider distribution west of the Rhine might suggest production in this area, and Sommer (1984, 103 and Karte 4) says that chip-carved strap ends without animal borders were made in Gallia and reached eastern provinces in smaller numbers. This could explain the distribution only along the frontier in the East. However he also shows clearly that chip-carved strap ends had different forms in East and West (Karte 5) and Böhme (1974) also shows that his type A with narrow ornamented tubular borders to the plate and type B with animal friezes along the edges of the plate have western and eastern bias respectively (93). There seem therefore to have been at least two major production areas, one supplying the Eastern provinces, and one the Western, to meet the demand throughout the Western Empire for elaborate chip-carved belt sets. The different distribution patterns in East and West may therefore be related to a changing function for chip-carved belt sets in the West – perhaps they are worn by others as well as by military personnel - or to changes in the patterns of movement and defence in the army in these areas.

The most important resolution of spatial variability is for Sommer's Sorte 1 Form C Typ F, divided by him into very precise variations. All finds of this type are concentrated heavily in the provinces of Germania II and Belgica II, with some finds also along the rest of the Rhine limes in Germania I. The type is also present east of the Rhine frontier in free Germany, with a much stronger presence for those variations dating to the fifth century rather than the fourth - this correlates with what is already known of movements between northern Germany and the former province of Germania Inferior, which had become the heartland of Frankish territory by the end of the fifth century. Sommer notes that individual buckle types in free Germany have a varied regional distribution and suggests that types found only beyond the frontier, such as the so-called 'Sonderform Günzburg' (Sommer 1984, 27), were copies of Roman styles made in Germanic workshops.

With the exception of variations 1a and 1b, found along the limes and scattered in the two provinces, variations specified by Sommer each have very precise linear distributions. Variations 1c and 2, and variation 3 (all with a date range of 364/70-407), and variation 4c, with a later date of 400-450 A.D., are found along the lower Rhine and in a linear distribution approximately following the Meuse and then extending further west. This distribution corresponds with the line of new fortified sites dating from 370/80 A.D. onwards and still maintained until the middle of the fifth century discussed by Böhme (1985, 132-3). (Böhme 1985 fig. 78 is reproduced here as fig. 249.) Using the evidence from the belt sets and female jewellery, he suggests that they were occupied primarily by Germanic troops (132) . Sites such as Vireux-Molhain are said to have had



a military function of surveillance and communication as well as defending the vicus itself. This different type of military installation forms part of a staggered defence system together with the important fortified road between Bavay and Tongeren (132). Mertens (1977) suggests that due to the difficulties of defending the territory north of this road, consisting mostly of alluvial floodplains with many rivers conjoining (66), the Bavay -Tongeren road, extending to Boulogne and Köln respectively, effectively became the frontier with an extensive system of forts, 'burgi' and watchtowers (68). If this is the case, it goes some way towards explaining these distributions. However, while buckles of variations 1c and 2, 3 and 4c do occur at Tongeren, it is interesting that the rest are not from the fortified road itself but from the line of settlements described by Böhme (1985). The distributions show that there was contemporary activity at these sites in the late fourth century, which continued into the fifth century. They also suggest that these variations of buckles at least continued to be worn only by those occupying fortified sites, i.e. by implication they are still military items of dress. Distributions of Sorte 3 Typ F (400-500 A.D.) and Sorte 1 Form C Typ F var.4c, which have the same spread along the Meuse and on the Rhine frontier, are found scattered in free Germany, illustrating Böhme's suggestion that those based at these sites had links with free Germany.

Variation 5, with a date of 400-450 A.D, is found beyond the Meuse in a more restricted area of Germania Inferior, and in a small area along the Rhine in Germania Superior. The fact that the very latest distributions (variation 5) are cut off by the Meuse, together with the opposite distributions of the other types, above, does support Merten's suggestion that the area between the Bavay-Tongeren road and the coast had been effectively abandoned; perhaps the line of defence had retreated even further to the Meuse by the fifth century. The fact that this abandonment is represented in the distribution patterns of objects worn by the military (and others?) is extremely significant and will be further discussed in the final chapter.

Buckles of variation 5 do not penetrate beyond the frontiers in any significant numbers. Conversely, the buckles which are concentrated along the Meuse are those types which are found in free Germany. Supposing that the Meuse or the Bavay-Tongeren road had become the frontier by the end of the fourth century, this is a useful illustration of the fact that 'Germanic' people were on both sides of the conflict at this time - it seems that it is not primarily the area deserted by the Romans that has links with the area beyond the frontier, but that still under Roman jurisdiction which may have been staffed mainly by 'Germanic' soldiers.

Sommer's regional patterns show similar groups to the above, with belt sets of serie 2 Ausfuhrung 1c (Stüfe III, end of the fifth century) in the same region as var.5 (Karte 7), and all of the other types illustrated (Stüfe I-III) with the opposite distribution concentrated around the line of the river and between the Meuse and the Rhine (Karte 1-6, 8). Similarly Böhme types Trier-Samson and Mainz-Greiffenklaustrasse are found along the Meuse and further east, though Böhme types Hailot and Krefeld-Gellep have a more diffuse distribution (Böhme 1974, Karte 16). All these types date to the end of the fifth century using Böhme's revised dating, (Böhme 1987). Böhme's Form Verigenstadt (Karte 18) is also present only east of the Meuse.

Variation 4a, dating to 364/70-407 A.D., is found mainly along the lower Rhine. It is interesting that this and some other even later types (Sorte 3 Typ F, 400-500 A.D.) still have a strong presence along the lower Rhine frontier in the fifth century. It is known that occupation at some fort sites on the Rhine did not begin until the 370's/80's A.D. and continued into the fifth century (for example Alzey, Oldenstein 1986, 350-1).

From the additional data collected it is worth drawing attention to the buckles found mainly in Pannonia and further east (Sorte 1 Form C Typ C) at Lankhills (fig. 235) in Clarke's foreign grave 234, and Canterbury, which sites have already been distinguished by the presence of material from the eastern Danube (see previous chapters). Buckles of Sorte 1 Form A, not common otherwise in Britain, are also found at Lankhills and Canterbury (see above) and Sorte 1 Form C Typ A, again not common in Britannia, also occurs at Lankhills (Clarke 'foreign' grave 106).

## SUMMARY

Sommer (1984) discusses the regional patterns found in the material in terms of workshop groups and says that workshop zones coincide in some cases with civil administrative districts, or in others with areas naturally demarcated by the landscape (102). There are obviously some differences in workshop set-up for the different types, with different patterns resulting from supply by major production centres in the east and west, and the localised distribution of buckles made in smaller workshops. Reasons for these differences must be accounted for in terms of changing patterns of demand. Of the several different types of distributions which become apparent from a closer spatial investigation of Sommer's types (local spread over an area, regional linear distribution, frontier-biased universal distribution) the latter two have close connections with the military organisation of the provinces. The distributions draw attention to the importance of linear features (roads, rivers) as foci of activity towards the end of the fourth century and into the fifth. They also show that, as Böhme (1974) and others have illustrated, in the fifth century there was increasing movement between Germania Inferior and free Germany.



table E

| <b>Sommer Type</b>                        | <b>Grid reference unobtainable</b>   | <b>Outside study area Sommer 1984</b>   |
|---|--|---|
| Sorte 1 Form A                            | Kisárpas, Hungary<br>Pusztavan, Hungary  | Single finds in Bulgaria, Denmark, the former Yugoslavia, and the former Czechoslovakia (122)   |
| Sorte 1 Form C Typ A                      | Folklingen, France   | Two finds in Italy (123)  |
| Sorte 1 Form C Typ B                      | Kisárpas, Hungary<br>San Pietro di Stabilo, Switz.                                   | Single find in Italy. Several from Morocco and the former Yugoslavia (124)  |
| Sorte1 Form C Typ C                       | None   | Several from the former Yugoslavia (124)  |
| Sorte 1 Form C Typ E                      | Folklingen, France<br>Neuwieder Becken, Germany                                      | One from the former Czechoslovakia (126)  |
| Sorte 1 Form C Typ F variations 1a and 1b | None   | One from Italy (126)  |
| Sorte 1 Form C Typ F variations 1c and 2  | Neuwieder Becken, Germany  | One from Italy (126)  |
| Sorte 1 Form C Typ F variation 3          | None   | One from Italy (127)  |
| Sorte 1 Form C Typ F variation 4a         | None   | None  |
| Sorte 1 Form C Typ F variation 5          | None   | None  |
| Sorte 1 Form C Typ F Sonderform Gunzburg  | Folklingen, France<br>Baben, Germany   | None  |
| Sorte 1 Form E Typ A                      | Substantion, France  | One from the former Yugoslavia (129)  |
| Sorte 1 Form E Typ D                      | Substantion, France  | One from the former Yugoslavia (129)  |
| Sorte 1 Form E                            | None   | Typ B found only in Italy, the former Yugoslavia and Romania (129).<br>Typ C, single finds in Italy, Romania and Tunisia (129). Typ E, some finds in Italy (129). |
| Sorte 2 Form D                            | None   | One each from Sweden and Spain (132)  |
| Sorte 3 Typ F                             | Weingarten, Germany (not known which of two, in Baden-Wurtemberg or Rheinland-Pfalz) | One from the former Czechoslovakia  |

## CHAPTER 6: THE END

In this chapter the aim is to compare and contrast the patterns found in each type of material and to examine its overall significance for each province and for the late Roman West.

### STYLES OF DECORATION AND LIKELIHOOD OF RELATED PRODUCTION

Bracelets and buckles/belt fittings examined are of copper alloy, as are most of the crossbow brooches. It may be useful to look at stylistic overlap in the decoration used on different objects to determine whether they could have been produced by the same workshops. All three of the object types share common decorative motifs used in the late Roman period which were also used to decorate ivory, bone etc. The most frequently recurring is the punched circle and dot motif found on all objects. Other common motifs are borders of engraved lines, repeated transverse lines, rows of chevrons or triangles, etc. Animal ornament is found on bracelets and buckles but not on crossbow brooches. Chip-carved decoration occurs only on belt sets. Niello inlay is found both on buckles/belt fittings and on crossbow brooches. Close correspondence in decorative patterns across object types is however not usually found. Where the ornamental field is of the same approximate proportions (bracelets and the bow of a crossbow brooch both present a long rectangular field, for example) it may be filled with the same patterns. These motifs are too simple, however, for there to be any necessary connection. More specific motifs do not generally cross over; for example, overlapping large rings of circle and dot decoration occur only on buckle plates; a circle and dot pattern which resembles the arrangement of spots on dice is found only on crossbow brooches. Evidence of some types of bracelets being made by the same workshop as those producing buckles/belt fittings occasionally occurs. Belt plates in particular are often ornamented with a complex pattern of small engraved lines, half-circle stamps, borders of lines filled in with transverse engraving, circle and dot motifs surrounded by a ring of dots (rosette motif), etc. Bracelets which together belong to a group of material probably made in Belgica (b31 and related, rosette motif; h3/h4/h5 motif) are stylistically similar, with the same borders of lines filled with transverse engraving, and circle and dot motifs surrounded by a ring of dots (fig.250). It cannot be said from this evidence that this group of bracelets is definitely made in the same workshops as those producing buckles and belt fittings, but what can be said is that the decorative motifs used and techniques of decoration of this group of bracelets are more similar to buckles and belt fittings than they are to any other group of bracelets, and some of them appear in very late contexts (for example at Vermand, Eck 1891, plate XIX 8) as the buckles do. An unusual flat penannular strip bracelet from Augst (Riha 1990, no. 521) must also be considered. This bracelet has a complex pattern of diamond motifs on a background of cross-hatched lines. In the centre of each diamond is a punched circle and dot surrounded by a ring of small dots. This patterning closely corresponds to that found on the long buckle-plates associated with horsehead buckles (fig. 250) and produced in Britain probably into the fifth century (Corney forthcoming, pers.comm.). The cross-hatching on these plates is usually on the diamond motifs (e.g. Hawkes and Dunning 1961, fig.15 reproduced here in fig. 250) rather than as a background.



There is some other evidence of end fourth/early fifth century bracelets sharing specific motifs with buckles/belt fittings. For example, those from Chatham Lines (compared in the bracelets chapter to very late material from Vron, and dated from mid 5th century parallels at Tournai) and Chessel Down were compared by Evison to stylistically similar motifs on late buckles and belt fittings (see also chapter 4, 77-8). Therefore some types of very late buckles and belt fittings and very late bracelets may have been produced in the same workshops; this would be an interesting shift if it is confined to the very late period. Apart from these types there is no stylistic evidence that buckles, bracelets and crossbow brooches were produced in the same workshops.

## GENERAL TRENDS

From the spatial analysis of the occurrence of types and decoration on the four classes of object it is immediately clear that there are some patterns which recur through all types of material. First of all it is important to emphasise similarities across all areas. Each object type is well represented in each area; late Roman graves through the whole of the study area are characterised by the common occurrence of beads and bracelets (female graves) or crossbow brooches and belt sets (male graves). There are some specific object types which are found throughout the study area. Standard types of bead and crossbow brooch (for example green hexagonal cylinder beads, biconical beads, blue diamond faceted beads, type 3/4b crossbow brooches) occur from Britannia to Pannonia. Cable bracelets, strip bracelets and snakeshead bracelets are found everywhere. However, when the material is examined in detail, this seemingly homogenous culture begins to break down. Not only are there differences in detail and decoration among these object types, but the frequency with which universally found types occur is also found to vary among the provinces.

## REGIONALITY

The most obvious pattern is the divergence of material culture in the western and eastern halves of the study area. In many respects types and styles of objects found in the Danube provinces are notably different from those occurring west of the Rhine. This divide occurs quite clearly in most types of bracelets and belt fittings (see Sommer 1984 for more details about the buckle types with an eastern distribution), and some bead types can also be categorised in this way. Even crossbow brooches, which are one of the most standardised items of dress known in the period, are found to show regional patterning in the types prevailing in the Danube area and west of the Rhine.

Larger regional areas are shown on fig. 251. As well as these general zones of regionality there are also small spatially restricted zones. The persistence of the Rhine area and Danube areas as zones of cultural homogeneity through the whole of prehistory and history is emphasised by Ehrich (1961). The patterns are not clearly demarcated by the political boundaries of the Roman provinces, except where these coincide with geographical features (e.g. some types of bracelet are found only in Britannia). Most often types of object found only in one province are limited within it to a smaller zone. The sea and rivers are found to link areas

together (Britannia with the Continent; the Danube provinces with each other) as well as to form frontiers (crossbows do not get over the limes very much; some material is restricted by a line demarcated by the Meuse-Sambre).

Against this background of regional preferences sites with foreign material become clearly apparent. A summary of the evidence for the presence of people from the Danube, Pannonia or beyond the frontiers (Sarmatia) on sites in Germania Inferior, Lugdunensis and Britannia is given below, listing sites where several different types of foreign material (in more than one of the four categories of object) could be identified.

## **CLUSTERS OF FOREIGN MATERIAL AT SITES**

### **Canterbury**

Buckle of Sorte 1 Form C Typ C Marlow car park cat. no. 415 (Pannonia/Dalmatia)  
Fragment of bracelet with wrapped terminals Cakebread-Robey no. 983 (Danube area)  
Grave rite Stour Street burial group (Pannonia)

### **Chartres**

White square cylinder beads C.77 6312 6-12 (Pannonia)  
Green diamond faceted beads gr. 723 (beyond the frontiers?)  
Hollow bracelet sép. 765 C.77 7382 3 (Danube area)  
4-strand cable bracelet with plain hook and eye fastening sép. 392 C.734224.1 (Pannonia)  
Flat green hexagonal bead C.73 1368 (Sarmatia)  
A number of other unusual beads whose origin could not be suggested (see chapter 3, 69)

### **Krefeld-Gellep**

Yellow square cylinder beads gr. 1043 (Danube)  
Diamond faceted green beads gr. 1470 and gr. 2887 (beyond the frontiers?)  
4-strand cable bracelet with wrapped terminals gr. 3007 (Danube)  
Fragment of bracelet with wrapped terminals gr. 3203 (Danube)  
Hollow bracelet gr. 2972 (Danube)  
Strip bracelet with b13 decoration gr. 2985 (Danube)  
Snakeshead bracelet with type 31 terminals gr.1492 (Pannonia)  
A number of other unusual beads whose origin could not be suggested (see chapter 3, 70)



## **Lankhills**

Clarke (1979) suggested that a group of burials was Pannonian or Sarmatian based on the deposition of material in the graves, mainly the wearing of jewellery (and by implication clothes) at burial, and especially the fact that the females had a large number of bracelets on the left arm.

The following evidence can now be compiled for this group of graves:

Differentiation between numbers of bracelets among women as opposed to juveniles (Pannonia)

Buckle of Sorte 1 Form C Typ A foreign gr. 106 (Not common in Britannia)

Buckle of Sorte 1 Form C Typ C foreign gr. 234 (Pannonia/Dalmatia)

Hexagonal blue cylinder beads foreign gr. 363 and 323 (Danube area)

Diamond faceted green beads foreign grs. 326 and 323 (beyond the frontier?)

Drop shaped green bead foreign gr. 336 (Pannonia)

Heart shaped blue bead foreign gr. 336 (Germania/Belgica)

Amber bead foreign gr. 336 (suggested by Guido 1979 to originate beyond the frontier)

Carnelian diamond faceted and flat hexagonal beads foreign grave 336 (Sarmatia, suggested by Guido 1979, 295)

A number of other unusual beads whose origin could not be suggested (see chapter 3, 69)

## **Tongeren**

Hexagonal blue cylinder beads gr. 37 (Danube area)

Wire bracelet with threaded glass beads gr. 37 (Danube area)

Strip bracelets with b13 and b16 decoration not from specific context (Danube area)

[not included in database, as date may be before the 4th century, yellow and blue square cylinder beads not from specific context (Danube area)]

This evidence of movement from east to west is not particularly suprising in the light of what is known about the period generally. Other material which seems to have drifted quite a long way from its probable production area has been cited in the previous chapters. Very clear evidence that this material has travelled directly with the wearers such as that above will of course be infrequent, as getting objects together in secure contexts depends on the deposition of the material very soon after the movement has occurred. How far material represents ethnicity etc. will be further discussed below.

## **DISTRIBUTION MECHANISMS**

Most types of object, it is now apparent, were produced regionally and not traded over long distances. It seems that almost all the object types which travelled to adjacent provinces or further afield did so either a) directly with the persons wearing the objects, who seem usually to have been travelling with the army, if their invariable presence on military sites is anything to go by; or b) were supplied directly by the army (crossbow brooches and some universal buckle types). There are a number of factors which suggest that this type of supply rather than market-



driven trade accounts for the distribution of universally found military objects, not least their official status which would mean that it was desirable to control appearance and access to the object. This, coupled with a spread across the study area of exactly the same types at the same sites is persuasive of a highly organised and regulated distribution. This is illustrated in figs. 252-3. Concurring distribution patterns for crossbow brooches of types 2ii and 3/4b with b2 foot, which have different stylistic date ranges (300-340 A.D. for type 2 and 350-410 A.D. for type 3/4), is especially suggestive; trade could produce similar patterns but only if the objects were contemporaneous and therefore likely to have reached the sites at the same time. Britannia is the only area where the objects show spatial divergence; this is interesting in itself as it suggests these objects reached Britannia with those wearing them rather than as a deliberate supply to the province (which fits with the small numbers found and distributions in the east). A similar concurrence of distribution also occurs across different object types with buckles of Sorte 1 Form A and crossbow brooches of type 3/4 with b4 foot (fig. 269). The distributions of these two object types mirror each other closely throughout the study area. As well as being found in the same general spatial areas, they occur at fourteen of the same sites: Bad-Deutsch Altenburg, Burgheim, Caister-by-Yarmouth, Chartres, Nijmegen, Keszthely, Krefeld-Gellep, Oudenburg, Pecs, Sagvar, Somogyszil, Strasbourg, Trier and Tulln. However, only once do they appear in the same grave, grave 49 at Tulln (Mayr and Winckler 1991).

The army had a strong effect on distributions even of civilian female objects. The correlation of bracelet and bead distributions with army movements in the Danube area shows that even types which remained within the area where they were produced are distributed along the same roads which were in use by the military at that time.

The only exceptions to these spatial patterns are beads, which are found universally in the same types and colours (with a couple of more spatially restricted types), and perhaps multiple motif bracelets. Some types of bead are more widely distributed in one colour than in another colour. For example, hexagonal green beads are ubiquitous while hexagonal blue beads are found only in the Danube area. Similarly, blue square cylinder beads are found in Britannia and on the Danube while yellow and white square cylinder beads are restricted to the Danube area. It may be the case that blue square cylinder beads have travelled from one of these areas to the other (though they could of course also have been manufactured in both areas). Blue square cylinder beads found on sites in Pannonia are in two of the three cases found on sites where British bracelets with twisted square section also appear. At one of these sites, Intercisa (Dunapentele), an imitation bead bracelet was also found. However, they do not appear in the same graves as the blue square section beads. Sites with British bracelets in Raetia are not generally those where blue square sectioned beads are present (with the exception of Augst and München). The fact that yellow and white square cylinder beads were probably made only in the Danube areas might suggest that blue square cylinder beads were also made here. Blue square cylinder beads are found at Krefeld-Gellep, in grave 2985 (Pirling 1989) with a b13 bracelet which can be sourced to the Danube area (also at Tongeren, but these have no date, see above, 119). This shows the difficulty of suggesting an area of production for many types of beads.



In the beads chapter, two possibilities were suggested for blue hexagonal beads - either that they were made in the same Danube workshop as green beads and only the green ones were traded or travelled by other means to other areas; or that green hexagonal beads were produced in more than one workshop and only the Danube one was making blue hexagonal beads. Either way, this is a clear illustration of the point that it is the preferences exhibited by the various areas which dictate the types of objects being produced or traded there, not just the hypothetical scale of production.

Similarly, British bracelets with multiple motif decoration reach the Continent in quite large numbers whereas cogwheel bracelets do not (only a single example at Oudenburg), though both are equally popular throughout Britannia. If multiple motif bracelets are traded to the Continent, this could be explained as the products of certain workshops finding a market on the Continent while others did not, which would again come down to a preference for certain bracelet types in certain areas. Bracelets in the b31 and related/rosette motif group which are produced in Germania and Belgica have some similarities to the multiple motif bracelets (though clearly distinguishable from them by innumerable small details), with complex circle and dot patterns. In the case of those with rosette motifs these vary along the length of the bracelet. They also have a blocked terminal (of a different form to those found on multiple motif bracelets). Multiple motifs frequently occur with very late context dates (see chapter 4, 77). Those reaching the Continent can also be assumed to have a relatively late date from their distribution in Germania. They avoid the area north of the Meuse-Sambre (see below), and therefore necessarily date to after this zone had been established as a culturally distinct area, which using dating from the buckles would be after 364/70 A.D. and possibly much later. From the late context dates of b31 and related and rosette motif bracelets, and their similarities with the decorative style of late buckles and belt fittings (above), it can be suggested that these also date to the late fourth century. Therefore the bracelets with multiple motifs and those with b31 and related decoration etc. were in production at the same time. It may be the case that a type such as multiple motif bracelets which was similar to types popular in Germania would have more chance of being successfully traded to Germania. Of course the other scenario is that the Continental types were produced in imitation of the multiple motif bracelets when this type was found to be popular in Germania and Belgica.

Other British types than cogwheel bracelets reach the Continent, in smaller numbers and (from contexts of deposition) probably with those travelling from Britannia. Therefore the absence of cogwheel bracelets apart from at Oudenburg is still difficult to explain, since they have no regional or chronological restrictions within Britannia. It is easy to accept that they were not traded for one reason or another; however it is implausible to suppose that those leaving Britannia threw their cogwheel bracelets away on leaving the province. If cogwheel bracelets were restricted to, for example, rural civilian sites, this might explain the distributions; however cogwheel bracelets appear on military sites as the other types do, and why they do not reach the Continent in larger numbers remains an enigma.

## SUMMARY OF PROVINCIAL AREAS



## 1. Britannia

It is clear that most (female) inhabitants of Britannia would have had a strong insular identity in the fourth century and that to the outsider 'British' material culture would have been readily identifiable (whether or not the wearers considered themselves to be 'British' in any sense).

There is evidence of numerous insular types of bracelet, some of which reach the Continent (e.g. multiple motif bracelets) and some of which do not (cogwheel bracelets). Some bracelet types demarcate smaller zones such as the east coast or the area around the Bristol Channel.

Distributions of popular types follow the roads east to west (e.g. East Anglia to Hampshire, the dominant spatial pattern) with most clustering in the south-west. Most datable contexts within the fourth century were found to be after 350 A.D. for bracelets, so the patterns represented may be assumed to be those of the second half of the fourth century. There is at least one type of insular buckle, which clusters to the south-west and is suggested to be of late fourth to fifth century date (Corney forthcoming, pers.comm.). At the same time, those in Britain would also have signified their (unconscious?) acceptance of the Roman world through wearing beads - these would be recognisable to people throughout the Western Empire. There are no insular beads; all of the bead types found in Britain occur throughout the study area. Beads from datable contexts within the fourth century, all types of which also cluster to the south-west (the only exception is discussed below), were also found to be predominantly from contexts after 350 A.D., with only Leicester, Caernarvon, Lankhills and St. Albans having material from before 350 A.D. Material dating to before 350 A.D. was in a minority at all of these sites. Sites often have context dates for beads at the end of the fourth century or even later (e.g. Exeter, 375-400 A.D., Holbrook and Bidwell 1991; Uley, end of the fourth century/ beginning of the fifth century or up to mid-fifth century for some contexts, Woodward and Leach 1993). This may be an accident of data collection (too many pre-350 A.D. sites with beads overlapped with the third century and therefore were not used) but it does mean that the bead patterns represented here are specifically those of late or very late Roman Britain. Where context dates within the fourth century are specified for Guido's sites (Guido 1978, 201-237) both early and late contexts occur; there are more later contexts. Ryan (1988) shows that late coins, mostly small denomination bronze (especially those minted after 388 A.D.), are also biased to the south-west. Annular beads with trail decoration are the only type of beads which do not have a south-western distribution, being found at Richborough, Leicester, Caernarvon, and Coventina's Well on Hadrian's Wall - one of the few distributions to include sites in the north. These are all military sites. Gold crossbows cluster to the west/north-west (notably *not* the south-west); more have been found in Britannia than any other province. There are no clearly identifiable insular crossbow brooches, though the province does have the largest range of variability in type 3/4 and types often have slightly odd features which suggest they were not produced in the Danube provinces as the more standardised types were. This is confirmed by metal analysis, which shows them to be of a different composition to those with stylistic features linked to the Danube (58-62). The profile of occurrence of the different types stands out from the other provinces, with proportionately more of type 1 (280-320 A.D.) and 5/6 (350-460 A.D.) and proportionately fewer of type 3/4 (350-410 A.D.) (see fig.17).



Metal/stylistic analysis also shows clearly that some crossbow brooches found in Britannia originated in the Danube provinces and in Pannonia. The general spatial patterning of crossbow brooches is different from the other types of material, which show a bias to the south-west (represented on fig. 254 by Guido's sites with beads). Crossbow brooches generally cluster to the east in Britain, especially later very standardised types (e.g. type 3/4 with b2 and b4 foot, type 5i and type 6ii [see fig. 254], types which are definitely not of British manufacture). These are found particularly on coastal military sites. Type 1, 2ii and 3/4 brooches from London, Richborough and Caistor-by-Yarmouth were found to be from the Danube area in the metal analysis/stylistic analysis (58-62). Divergent patterning compared to the rest of the study area in type 2ii and 3/4b with b2 foot has already been mentioned for Britannia above. Notably Sorte 1 Form E, elaborate chip carved belt sets which are found widely on the limes on the Continent, also occur only in the extreme south-east of Britannia (fig. 254). Crossbows of type 5ii, a regional variant found only in the north-west (fig. 78) interestingly do reach sites further west such as Lankhills near Winchester; there are also two type 5/6 hybrid brooches at Lankhills. Clarke (1979, 257) suggested on stylistic grounds that these brooches were produced in Britannia.

Bracelets which might be described as being from the Danube area are occasionally found in Britain: snakeshead bracelets of types 28 (Caistor-by-Norwich), 36 (Colchester), a snakeshead bracelet with square end and two punched circle and dot motifs (St. Albans), 4 strand cable bracelet with wrapped terminals (Colchester), and a 2-strand cable bracelet with wrapped terminals (Canterbury). There is also a flat hexagonal green Sarmatian bead from St. Albans (Wheeler and Wheeler 1936, fig.47a). More detailed evidence for Canterbury and Lankhills is given above. All these sites, except Lankhills, are in the south and east. (There may also be late fourth century links, mainly in female civilian objects, between the south-west and Pannonia, discussed later below). There is similar evidence for some British types of bracelets reaching sites in the Danube area; Augst has a particularly large number of British types, and strip bracelets with a8 and a10 and related decoration are found here and scattered more widely in Raetia, as are bracelets with twisted square section. Bracelets with twisted square section are also found in Pannonia, as are bracelets with imitation bead decoration.

All insular types of material examined, which date predominantly to after 350 A.D. or even later, in some cases going on into the fifth century, therefore show a shift in distribution pattern to the south-west of Britain, together with glass beads, which may have been produced here but were in styles common throughout the Empire. Material with 'official' Roman status of both early (crossbow brooches of type 1) and particularly, late date (Buckles of Sorte 1 Form E; crossbow brooches of types 5i and 6ii) clusters to the south-east. Most of this can be suggested to be of Continental origin. Bracelets from the Danube area, which probably reached Britannia via the army, are also found in the south and east. It seems that Britannia is significantly different from the limes provinces with military items such as crossbow brooches not taking hold in the same way, thus possibly showing an erosion of Roman authority (further discussed below). Although in the early fourth century crossbow brooches are quite widely found, and in fairly large numbers, and gold crossbows of types 1 and 2 are found in western Britain, Britannia's divergence from the



other provinces seems to begin when type 3/4 brooches are being produced and thereafter accelerates. 'Mainstream' military culture such as crossbows and elaborate belt sets (Sommers Sorte 1 Form E) retreat further and further to the east as the fourth century progresses. If type 6ii crossbow brooches are no longer military (see below) a possible retreat of Roman sanctioned civil authority (to the extreme south-east by type 6, dated by Pröttel to 390-460 A.D.) can also be traced. Hoards of precious metals also show a bias to the east in the later fourth century, particularly East Anglia (Hobbs 1997); this fits the trends illustrated if hoards can be generally assigned to those of high status who wanted to express an association with Rome. Material which reaches north(western?) Britain sometimes also has more parallels on the Continent than in the south, for example annular beads with trail decoration (which also have a bias to military sites). The divergence of Britain from Germania, Belgica and provinces further east, and increasing separation from the Continent, however, can only be said to occur in official 'Roman' and sometimes 'military' insignia; links with the Continent through bracelets and beads, items which were worn by the civilian female population, are strong. This can be seen in the common bead types on both sides of the Channel and in British bracelet types reaching the Continent in some quantities, with the possibility that multiple motif bracelets were actually traded to the Continent. These continued strong links, together with the general shift of insular material to the south-west and concentrations of coin finds here after 388 A.D., show that the retreat of 'Roman' military, official and high status civilian material was not symptomatic of a general decline in 'Roman'-derived culture (which now had clear regional associations in object types such as bracelets). Here a distinction must be drawn between the official Roman military objects whose production was controlled by the Roman authorities, which can perhaps be associated with the withdrawal of troops and official Roman jurisdiction from Britannia, and the universal 'Roman'-derived culture. Notably 'Roman'-style items such as beads which were not high status continued to flourish in the south-west. Horsehead buckles based in the south-west are particularly interesting as they developed from the more standard Roman (military) type of belt set, but are clearly found only in Britannia. These items may or may not have continued to be military (most are museum finds with no details of context, Corney pers. comm.). If they were military, those wearing them would have to be described as a 'British' rather than a 'Roman' army since they are not found outside Britannia and are distinctively different from the belt sets shown, for example, in the *Notitia Dignitatum* (see chapter 1, 14), which occur only in the east in Britannia. Nor do the wearers of horsehead buckles seem to have any connection with the type 6 (390-460 A.D.) crossbow-wearing remnants of official Roman authority present in the extreme south-east in the same period.



## 2. Germania and Belgica

There is some evidence of regional types in most of the objects considered, notably in crossbow brooches as well as bracelets, beads and buckles. Many bracelet types found in these provinces are of types which probably originated in Britannia. It is suggested above that the group of related bracelet types which is confined to the area may have been produced in a workshop also responsible for the production of late buckles, themselves having a late date. It is likely that more regional types specific to the area would become apparent were more data available (Hilary Cool, pers. comm., notes that while museums in France do not have generally have collections of items such as bracelets, large numbers are seen to pass through the hands of antiquities dealers, presumably many of which are the remnants of 19th century excavations, when only the more obviously valuable items were kept). Heart shaped beads may have been produced in Germania Inferior and Belgica. Opaque beads with a wavy trail are known to have been produced at Trier but cannot be described as representing a regional preference as they are extremely widespread. All other bead types are commonly found throughout the Empire.

The appearance of a regional type of crossbow brooch in this area is extremely significant. Generally the profile of types found in Germania and Belgica is similar to provinces further east, with the greatest proportions of type 3/4 brooches (this contrasts with the picture in Britain). Type 3/4 brooches have a distribution throughout the two provinces, not just on the Rhine limes, with a particularly noticeable concentration around Trier. It is suggested in the crossbow brooches chapter that type 2 shows a stylistic divergence of this type into types 2i, 2i, and 2iii, the last having a possible production area in Germania or Belgica. Previously, some type 1 brooches of idiosyncratic appearance may have been produced in the west (e.g. in Britannia, above). Now, with the production of type 2iii, brooches produced west of the Rhine are a clearly recognisable type distinguishable from those probably made in the East, such as type 2ii. Production of crossbows in the west as well as the east, and in high status materials (e.g. a gold type 2iii brooch from Odiham, Brailsford 1951, fig. 10 28), suggests that demand in the provinces of Germania and Belgica had increased by the time type 2 were in production (300-365 A.D.). There may have been an increasing number of military and/or civilian officials in Germania and Belgica/the west generally in this period (as discussed above). There is therefore an indication through the material that these areas played a pivotal role in the development of the crossbow brooch and its redefinition as a high status object only.

Buckles and belt fittings also show regional types proliferating in Germania Inferior, especially after 350 A.D. This was noted by Böhme who suggests multiplying small workshops as opposed to previous production on a large scale (buckles chapter). This suggests that imposed 'Roman' authority (as signified through the regulated production of universal military culture) may have been in terminal decline (this correlates with historical evidence such as the sack of Trier in 352 A.D.). These buckles have a suggested date of late fourth/early fifth century (Sorte 1 Form C Typ F) and fifth century only (Sorte 3 Typ F). It has been established that a number of variations of Sommer's Sorte 1 Form C Typ F, and Sorte 3 Typ F (as well as some of Sommer and Böhme's



other types) have a distribution which strongly follows a line partly demarcated by the course of the Meuse, thereafter following the Sambre. They are not found north of this line except on a couple of sites at the head of the Rhine. Sorte 1 Form C Typ F Var 5 (fifth century) has the opposite distribution and is *only* found north of the Meuse-Sambre line (see figs. 237-242, 248). It is suggested in the buckles chapter that this became a boundary or border of some kind in the very late fourth-fifth century crossover period. Mertens (1977, 68) says that the line of defence in this period moved to the Bavay-Tongeren road, slightly north of the Meuse-Sambre line. Brulet (1995c) confirms that flooding in the Rhine delta area on the coast made it both inhospitable and difficult to defend in this period (104), and says that fortified settlements behind the Bavay-Tongeren line became very important (117). Böhme's line of new fortifications (a new type of fortified settlement which differs from the standard Roman fort) following the Meuse-Sambre (easier to defend than a road?) corresponds closely with the buckle distributions. Looking at the sites used by both Sommer and myself between the Meuse-Sambre line and the coast, there is a notable absence in the area of the Rhine delta which would correspond with the flooded area suggested above. Sites are, however, found to the east of this. On re-examination of the other classes of material studied by me, the previous absences of some types of object on sites in the area north of the Meuse-Sambre, and their correspondence with the same line of defence, becomes apparent.

For example, some bracelet types found predominantly in the south-west of Britannia cross the Channel in appreciable numbers but are not found in this area. Multiple motif bracelets can be seen to clearly fall outside the area marked off by Sommer's Sorte 1 Form C Type F Var. 5 (fig. 255), while bracelets with b3 decoration avoid an even larger area (fig. 256) apart from a single find at Oudenburg (which also has a few buckles of the types concentrated along the Meuse-Sambre). Bracelets with b3 decoration are found in datable contexts which are very late in the fourth or early fifth century and multiple motif bracelets also occur more frequently in late fourth/fifth century contexts. Examples include Canterbury, Stour street 312, dating to 400 A.D. onwards (Canterbury Archaeological Trust unpublished); and Uley, fig. 129 3, with a date of c.400 A.D. (Woodward and Leach 1993). Late contexts for multiple motif bracelets are especially frequent on the Continent, e.g. Lisieux, sépulture 97, dating to 375-400 A.D. (Calvados Service d'Archéologie unpublished); Vron, tombe 201a 5, date 370-75/88 A.D. (Seillier unpublished); Samson, grave 8 2 and 3, dating to after 413 A.D. (Dasnoy 1969). Similarly, crossbow brooches of type 5i (Pröttel dated these to 350-415 A.D), also fall outside the line partially demarcated by the Meuse (fig. 257), as do blue square cylinder beads with diamond-shaped facets, long green hexagonal cylinder beads, and green and blue biconical beads (apart from presence at Oudenburg as before) - the beads also show concentrations on the line itself (figs. 258-260). Diamond faceted beads occur in my database from the mid fourth century west of the Rhine, and slightly earlier than this in the Danube provinces. Again there are some very late contexts drifting into the fifth century, for example at Lisieux and Matagna-la-Grande (table F). They definitely continued in unbroken production into the fifth century and later (Istvanovits 1993, 126-7). Green hexagonal cylinder beads also appear most often in contexts after 350 A.D. west of the Rhine.



Most British sites used for beads date to after 350 A.D. in any case (above, 122) - this is also found to be the case on the Continent. Opaque beads with a wavy trail are absent in the area also, though annular examples seem rather to be cut off by the Bavay-Tongeren road slightly further north (fig. 261). Beads of other shapes with a wavy trail are concentrated along the line following the Meuse-Sambre and along the road further to the south (fig. 262). If these variant distributions are chronology related, this would also account for their divergent patterning in Britannia with the perhaps earlier annulars at military sites further to the north. (However context dates for the two types do not show a possible difference in chronology.) Trail beads generally are thought to have a late date, at least west of the Rhine, and occur in many early fifth century contexts (see chapter 3, 72). In addition to these patterns, which are distributions of relatively popular object types, so the spatial demarcation is clear, many minor types of beads and some crossbow and buckle distributions might be suspected of conforming to the same pattern were more data available.

Sommer's Sorte 1 Form C Typ F Var. 5 are found on some of the same sites along the Meuse as the other types of buckles and objects which avoid the coastal area. This shows that although the divisions in the material are clear there is also some overlap. It is possible that buckles of Sorte 1 Form C Typ F Var. 5 spread to sites on the Meuse line over time. This would be supported by the fact that they have a later date range than most of the types found on the Meuse-Sambre line. The evidence from the b3 strip bracelets, which avoid an even larger spatial area, and which may be of fifth century date, would also reinforce this. Variation 5 found between the Meuse-Sambre and the coast is as the name implies obviously only a variant of a style current on the Meuse-Sambre line. It would appear that those living in this area still wanted to conform to a Roman-style culture, and types were produced which copied those found on the other side of the Meuse-Sambre, though with small but significant variations. Incidentally King (1992, fig. 16.1) shows that fifth century non-imperial coinage imitating official Roman coins also clusters around the Meuse-Sambre line. She says it is impossible to tell if it is minted by 'barbarians' or local leaders still trying to represent Rome (194), and the distributions themselves are rather ambiguous, though all types of solidi cluster north of the Meuse-Sambre. Silver with a Trier mint mark, and imitations of Trier mint mark silver, are found mostly on the other side of this line.

Germania Inferior is known to have been in a state of flux in this period. Settlements of Germanic people are attested in the historical sources in the area of the Rhine delta immediately west of the river (the Civitates Batavorum and Traianensium) after 350 A.D. and these areas are notably absent from the Notitia Dignitatum in 406 A.D. (Bloemers and Thijssen 1990, 134). It is suggested that sites like Nijmegen on the Rhine continued in occupation through the fourth to fifth century, but that there were changes in the social and economic structure after about 410 A.D., when Nijmegen and the surrounding area no longer formed part of the Empire (Bloemers and Thijssen 1990, 144-5). The Frankish king Childeric was buried at Tournai (incidentally with 'Roman' symbols of authority - a gold type 7 crossbow brooch and a purse of denarii), which is also within the area between the Meuse-Sambre and the coast, in 482 A.D. (Dumas 1982). Spatial patterning in the material showing a general erosion of Roman-style culture - perhaps



related to problems of supply and distribution - and difficulties of access in this area would therefore appear to correlate directly with historical evidence.

Sommer's buckles of Sorte 1 Form C Typ F Var. 5 only appear on a single site in free Germany, whereas of those buckle types which follow the Meuse-Sambre, several cluster around the North Sea coast beyond the frontier (the occurrence of late Roman buckles is of course already demonstrated by Böhme 1974). Sites in the new line of fortifications on the Meuse-Sambre and further to the east were argued by Böhme 1974 and others to represent Germanic soldiers in the Roman army, *foederati* settled on Roman soil. They have their own distinctive grave rite which later became the norm in Frankish Gaul. The type of fortification is different from those found, for example, along the Bavay-Tongeren road.

Halsall (1992) argued that the definition of these graves as 'Germanic' should be questioned, based as it was on grave rites which, although atypical compared to earlier Roman burial rites, were not actually found outside the Empire (202). He says that the *tutulus fibeln* found at these sites and often cited as 'Germanic' evidence could have been made within the Empire (though they do occur outside it) and do not necessarily signify 'Germanic' status. Halsall explains the *tutulus fibeln* away as 'Germanic inspired' (201) but this cannot account for the buckle distributions which he mentions (200) but thereafter ignores. Type 5 (350-415 A.D.) crossbow brooches still occur on Rhine frontier sites, but their concentration is along the limes itself, notably below Krefeld-Gellep, with only one found in the area where the Meuse-Sambre concentration of buckles lies. If the brooches are still taken as indications of military status, which their presence on the frontier and on the military road in the Danube suggests, (at least, official 'Roman' status) they show that 'official' high status Roman army personnel were not occupying this line at this date (which also correlates with the change in type of military settlement). Similarly, type 6 crossbow brooches do not cluster on this line but further west (however they do not appear on the frontier either and may not be a good indication of military activity). Troops of unspecified origin which never had, or no longer had, access to 'Roman military' material culture, but which were still defending Roman territory, might be the best way to describe those occupying the line partially demarcated by the Meuse-Sambre. The evidence from other finds which are cut off by this line shows that it was defending an area where 'Roman' material culture was still present. Those actually occupying the fortified sites may have been Germanic or local inhabitants (if they are not Germanic, links with free Germany still remain to be convincingly explained). However it certainly seems to be the case that they were defending the 'Roman Empire' (demarcated by material culture) whether or not they considered themselves to be Roman, or thought of the Empire as extending further than a very small area of northern Gaul represented by the restricted distribution of these object types. Since the buckles are of a regional type restricted to a small area (as are the horsehead buckles in Britannia, above) those wearing them may have identified themselves, or have been identified by others, more as a regional group (changes in grave ritual would suggest this as a distinctive northern Gallic inhumation rite is clearly distinguishable by this time, Halsall 1992) and their military may not be 'Roman army' in the conventional sense of the term. These persons effectively continued on from the type 3/4 (330-



410 A.D.) crossbow-brooch-wearing 'official' Roman army and the type 5 (350-415 A.D.) more high status but still plausibly military and definitely 'Roman' (cf. imperial portraits sometimes found on these brooches, see chapter 2, 50) officials who were present in the area. The buckles may have been intended to signify continuing 'Roman' status (as the imitation TRP silver may, above). (Similarly, Ostrogothic kings are known to have continued to strike gold in Ravenna in the name of the Byzantine Emperor, Reece pers.comm.). This purported 'Roman' status has, however, inevitably been redefined.

### 3. Lugdunensis

This province has the smallest sample of material for all object types, which may be partly an accident of collection (see chapter 1, 24-5) but may also be significant in itself. In particular, those working in the area have drawn attention to an absence of 'Roman' objects such as crossbow brooches in Brittany (see chapter 2, 42), and there are no sites here on the map. Areas of Lugdunensis which do have material show that there is a general similarity of material to the neighbouring provinces of Britannia (particularly the south-west of Britannia) and Belgica. Lugdunensis does not show regional types in any material but this is probably due to the small numbers of objects studied in this province. It is similar to Britannia in that it has an idiosyncratic profile of crossbow brooch types (with proportionately far more of type 6) and in that the type 3/4 brooches found here are often odd - variability in circle and dot foot pattern is at its highest in this province. The most obvious explanation for this would be that these idiosyncratic types were made more locally, and that there was not a heavy demand for crossbows of type 3/4 (or if there was, there were problems with supply). It would appear that Lugdunensis never had large quantities of military material imported from the Danube such as type 3/4 crossbow brooches. Since this is also the case in Britannia, this is likely to be because these provinces are the only ones not near the limes.

There seem to be some links between Pannonia/Sarmatia and Lugdunensis/south-western Britannia (fig. 263). The following types of material cluster together in Pannonia and in western France, south-western Britain, and on the Meuse-Sambre line: white spherical segmented beads, white square cylinder beads, white cylinder beads, flat round or flat cylinder beads and buckles of Sorte 1 Form C Typ C. Chartres and Lankhills in particular have strong evidence for this (see above, 118-9). Clarke (1979, 376) dates the foreign graves at Lankhills to 350-410 A.D.

By the late fourth century into the fifth century there is a definite shift of focus to this area which follows the general trends for material to move to the west. This shift may in part result from events in Germania Inferior (above, 127) - the inaccessibility of the area north of the Meuse-Sambre might mean the coastal area further west became more important. The prevalence of type 6 crossbow brooches, which may by this date have indicated high status civilians rather than purely military personnel, is an indication of the importance of Lugdunensis to the remaining Roman authorities in the West in the fifth century.



#### 4. Sequania, Raetia and Noricum

These heavily militarised provinces on the Danube limes show close similarities in the types of bracelets, beads, and early types of crossbows found, which are regional to the area as a whole. Some types of Pannonian bracelets also reach the area. The most data has been collected for Raetia so the patterning shows up most clearly in this province. The area is one of few to have possible regional bead types (blue hexagonal cylinder; yellow square cylinder?). Once these provinces are reached, the popularity of bracelet types different to those found west of the Rhine (such as hollow bracelets and penannular bracelets with snakeshead terminals) becomes strikingly apparent; some types of bracelet have an extreme regional restriction and demarcate very small zones within Raetia. In contrast, the provinces are among the most conformist in the profile of crossbow brooches found and the occurrence of different foot patterns on type 3/4b brooches, though some type 1 brooches form a regional group here, and most early brooches may have been produced mainly in Raetia/Noricum. There are also several buckle types and type variants which are found in the Danube area and further east which do not occur west of the Rhine, e.g. Sorte 1 Form B (Sommer 1984, 21). Distributions of all object types, not just the expected military crossbow brooches and buckles, are related directly to the limes and the lines of defence behind it, based on roads. Sites studied which have no military connections are rare in this area. Geographical constraints obviously limit settlement in the hinterland and perhaps the focus of archaeological research in these areas has naturally been the limes itself.

There are several different spatial patterns of objects occurring on the line of the limes itself, on the military roads behind the limes, etc. It has already been noted that crossbow brooches of different types and with various decorative patterns show some spatial variance in the way they follow these lines and it is suggested (crossbow chapter) that this may be time related. These patterns also recur through other types of material, and sometimes a very close correspondence can be seen in the spatial distribution of different object types.

1) Distributions following the line of the Danube frontier from Pannonia approximately as far as Burgheim/Regensburg, then in a line east of the road to Bregenz via Augsburg and Kempten.

Type 1 crossbow brooches with egg/cone shaped knobs (280-320 A.D.), fig. 22.

Type 1 crossbow brooches with a 10 foot decoration (280-320 A.D.), fig. 264.

Flat snakeshead bracelets with type 10 terminals, fig. 264 (the solid variety have a different pattern, see below, 131).

2) Distributions following the frontier line only and not the military roads.

Type 2i crossbow brooches (300-340 A.D.), fig. 265.

Type 3/4 crossbow brooches (325-410 A.D.) with a 2/d1 bow decoration (possibly quite early in the date range as a 2/d1 bow dec is most popular on the earlier types 1 and 2), fig. 265.

Long blue hexagonal cylinder beads. The only datable grave for these beads (to a period within the fourth century) is Sagvar grave 342 with a date of after 346 A.D., fig. 265.



3) Distributions following the line of the military road set back from the frontier and running parallel to it.

Type 2ii crossbow brooches (300-340 A.D.) with a10 decoration, fig. 266.

Type 2 crossbow brooches (300-340 A.D.) with a2/d1 bow decoration, fig. 266.

and buckles of Sorte 1 Form C Type B (whole of the fourth century), fig. 266.

Type 3/4 crossbow brooches with e6 bow decoration, usually type 3/4b (see chapter 2, 48), therefore date range 350-410 A.D., fig. 270.

Solid snakeshead bracelets with type 10 terminals also follow this line. Datable examples of the latter are from Bonaduz (grave 114, Taf. 11 6) and Tamins (grave 1964/1, Taf. 22). Both have context dates of 350-400 A.D. (Schneider-Schnekenburger 1980), fig. 270.

Buckles of Sorte 1 Form E (380-early fifth century on the Danube), fig. 272.

4) Distributions following the frontier line from Pannonia and then found on the military road in the Danube limes area to Bregenz via Kempten.

Sorte 1 Form A buckles (290-400 A.D.), fig. 269.

Type 3/4b crossbow brooches (350-410 A.D.) with b4 foot decoration, fig. 269.

Type 3/4b crossbow brooches (350-410 A.D.) with b5 foot decoration, fig. 46.

5) Distributions following both the frontier line and the military road parallel to it behind the frontier, and also found along the road between Regensburg and Bregenz via Kempten.

Type 2ii crossbow brooches (300-340 A.D.), fig. 267.

Type 3/4b crossbow brooches (350-410 A.D.) with b2 foot, fig. 267.

Type 3/4a crossbow brooches (335-355 A.D.) with a10 foot, fig. 43.

6) Dropping off in Raetia/Noricum altogether, with a very sparse distribution along the line of the road parallel to the frontier.

Type 3/4b crossbow brooches (350-410 A.D.) with b7 foot decoration (which Keller says are later in the date range, later than b2, b4 and b5 because there are more circle and dot pairs on the foot, see chapter 2, 46), fig. 271.

Type 5i crossbow brooches (350-415 A.D.), fig. 271.

From this data a chronological sequence of activity along the limes and the various military roads in the area can be suggested. At the end of the third century/beginning of the fourth century (type 1) there is activity along the limes as far as Regensburg and in a line east of the military road via Kempten to Bregenz (fig. 264). In the first half of the fourth century activity shifts from this area (fig. 265), and slightly later (3/4a along this line, and not on the frontier line) activity is also concentrated on the military road running behind the frontier and parallel to it (fig. 266). In the second half of the fourth century activity on the limes itself continues and there is also activity on the Bregenz-Kempten-Regensburg road (figs. 267-9). Later in the second half of the fourth



century the road parallel to the frontiers is the main focus of activity (fig. 270). By the end of the century and moving into the fifth century, activity in the Danube region continues to decline with a few traces still in the region of the military road running parallel to the frontier (figs. 271-2); as the fifth century continues there is no evidence of continuing Roman authority (type 6ii, 390-460 A.D., not found here at all).

The homogeneity of culture through the three provinces must in part be a result of the Danube and the military roads providing easy links between one province and the next. Even non-military objects have distributions following the patterns of distribution in military objects. This strong military presence seems to be the overriding force shaping activity in the provinces throughout the fourth century. The regional distribution of type 1 brooches with egg-shaped or cone shaped knobs and a double cuff to the base of the knob is pronounced, but there are no regional crossbow brooch types after type 1 in this area. The high numbers of type 1 brooches in a specific regional variant may indicate a focus of military activity in Raetia and Noricum at this time - production may have been carried out here for a time to meet increased demand. Regionality is also pronounced in other material, which, unlike the crossbows, is a continuing feature of the provinces through the fourth century - the strong regional types of bracelets apparently are produced during most of the century (strip snakeshead bracelets of type 10 are associated with early type 1 crossbow brooches whereas solid snakeshead bracelets of type 10 are found in later datable contexts (above) and have a distribution associated with later material). According to Sommer (1984) and Böhme (1974), regional types of buckles and belt fittings are also found here, though they tend to be variants of types found more widely (see chapter 5, 100, 105-6). However in contrast to the provinces west of the Rhine discussed above, there is no evidence for the continuing development of a regional character after the end of the fourth century and even more standard very late Roman material such as type 5 and 6 brooches are not found here. Opaque beads with trail decoration, which may date primarily to the fourth-fifth crossover period where they are found within the Empire (above, and beads chapter), are also scarce in this area, especially when this is compared with their widespread occurrence throughout the rest of the study area. The reduction in material generally towards the late fourth century and the total evaporation of the very prolific 'Roman' style material culture at the end of the fourth century is very striking, and again emphasises that the 'Roman' nature of these areas was mostly to be found in its military culture and that once the military had left there was little continued use of 'Roman' style material culture of any archaeologically recoverable kind.

## 5. Pannonia

In some respects Pannonia can be included in the regional area together with the other Danube provinces and it shows the same preference for hollow bracelets and penannular bracelets with snakeshead terminals. However, it is also distinctive in a number of respects. Many types of snakeshead bracelet are found only in this province, and they are worn in graves in a distinctive pattern specific to Pannonia, with many on the left arm. Numbers of bracelets in Pannonia are in consequence extremely high. Incidentally, it is only in Pannonia that (admittedly in a minority)



elaborate belt sets and crossbow brooches occur in female and juvenile graves (Sommer 1984, Jobst 1975). Beads worn seem to be of the same types as those found in other provinces, with one bead type specific to Pannonia. Buckle types are commonly those found universally, and those which are biased to the Danube area and regions further east. There is one buckle type which is found only in Pannonia within the study area (discussed in the buckle chapter) and Sommer (1984) suggests other variants. Crossbow brooches occur here in extremely large numbers, especially type 3/4b (70% of all crossbow brooches). Evidence given in the crossbow brooch chapter confirms that these brooches were produced here in large quantities, from where they reach most parts of the study area, especially the limes provinces. Crossbow brooch types follow the profile seen in the other provinces, with proportions of different foot patterns the same as those found in the other Danube provinces. Type 6 brooches do occur in Pannonia, contrasting with their absence in Raetia and Noricum, and appear to shift in distribution slightly, not being found in the south-east as the other types are. Similarly, late buckles, Sorte 1 Form E (380-early fifth century on the Danube), are found only along the river line as far as Csákvár and are not found in other parts of Pannonia as earlier types are. Although, as for the other provinces in this area discussed above, the collapse of the limes in this area had a drastic effect on the (military) material culture found here, there is some evidence that bracelet types continued to be produced into the early fifth century and bead types such as diamond faceted beads continued in production for many more centuries (see chapter 3, 70).

## MOVEMENT BEYOND THE FRONTIERS

Of course, the focus of the thesis is on patterns within the Empire and data has only really been collected from areas within the frontier. However, some material creeping in from beyond the frontier (Sarmatia) has already been discussed. The work of Sommer (1984) and Tempelmann-Maczynska (1985) on buckles and beads respectively does enable interesting comparisons to be made. There is also a study on bracelets beyond the frontiers by Verma (1989). Sommer draws attention to buckles of Sorte 1 Form C Typ F which are found outside the limes. Sonderform Günzburg does not occur at all within the Empire, but in a cluster just beyond where the Rhine and Danube coincide (see fig. 243). Other variations of Sorte 1 Form C Typ F, which otherwise mostly follow the Meuse-Sambre line and date to 364/70-407 A.D. cluster in an area on the North Sea coast. Interestingly, Tempelmann-Maczynska shows that green diamond faceted beads cluster here too (it is suggested in the beads chapter that those found in the study area originate outside it). A number of bead types occur on both sides of the frontier (diamond faceted beads; opaque beads with trail decoration) but, whereas the buckles for the most part seem to have been produced within the Empire and drifted beyond the frontier, these beads seem to show the reverse pattern - popular outside the Empire before the fourth century (see chapter 3, 71) and then moving within it (and ultimately produced within it as at Trier) in the fourth and fifth century. Crossbows do not seem to occur beyond the frontiers in any significant numbers; for example, Böhme (1974) who studied material in so-called 'Germanic' graves between the Elbe and the



Loire in the fourth and fifth centuries has only one east of the Rhine, from Hemmoor-Warstade grave 60 (Taf. 22 10), notably fewer than the numbers of buckles and belt fittings found at the sites which he examines beyond the frontier. Gold crossbows, however, do seem to have a strong propensity to drift beyond the frontier. Given that only 7 gold brooches occur in the database of material within the frontier, four more which I came across beyond the frontier, at Lengerich, Germany, Petrijanec, Erickstanbrae (shown on the distribution maps just beyond Hadrian's Wall) and in the Moray Firth in the far north of Scotland seems an unusually high proportion. It may also be noted that the crossbow at Tournai (north of the significant Meuse-Sambre defences in the fifth century, above) from Childeric's grave, d.482 A.D., is of course also technically not from within the Empire either, since this was Frankish territory by this date (though Childeric was ostensibly acting with Roman authority over the area). This would give six gold brooches within the Empire in the study area (3 at Trier and environs and 3 in Britannia) and five outside the Empire; and this is without carrying out a systematic search for crossbows beyond the frontier. Within the Empire, gold crossbows in Britain do of course travel further west than the other types which are confined mainly to the east coast.

Although the evidence for crossbows is anecdotal, it seems that in the fourth and fifth centuries buckles and perhaps mainly gold crossbow brooches were sought-after markers of wealth. This could be due to their symbolic significance. Presence in Childeric's grave is suggestive of continued symbolism of high rank and desired 'Roman' status. Conversely, they could be desirable purely for their actual monetary value (Lengerich has a hoard of late precious metal objects which might suggest the latter, Hobbs 1997, 66-7). Whatever the reason, gold crossbow brooches and buckles in all materials travel beyond the frontiers, whereas 'Roman' beads and bracelets do not; beads move the other way, from outside the Empire to within it. These movements probably have as much to do with the value of these items both within and without the Empire (Germanic objects such as double sided bone combs were becoming fashionable in the fourth century, see chapter 1, 22) as they do with actual movements of people from one area to another.

## SIGNIFICANCE OF REGIONAL VARIATION IN FEMALE DRESS

It was suggested in the first chapter that female dress might show a more active expression of regional identity than male dress. Certainly bracelets show the most spatial variability and from the evidence gathered it can be surmised that women from one area or another could be visually distinguished by their dress. Objects such as earrings and rings commonly worn by the provincial Roman population are not found before the conquest (Johns 1996, 30-31). Most bracelet types made in the fourth century are distinctively different from anything worn previously (Johns 1996, 40) and bracelets were in any case not common in the period immediately preceding the Roman occupation (Johns 1996, 108). Pre-Roman and Roman beads are distinctively different (see Guido 1978). Personal ornaments such as these could therefore be taken to indicate the 'Romanised' character of the provinces. However, it appears that Roman culture was in the fourth century being redefined as regional culture in female jewellery such as bracelets. A Pannonian



woman might be wearing a necklace containing white square cylinder beads, and have a stack of snakeshead bracelets on her left wrist with flat hammered rectangular ends and punched circle and dot decoration. A British woman might have a couple of cogwheel or bead imitative bracelets. A Raetian woman might have a necklace containing blue hexagonal cylinder beads, a bracelet of threaded glass beads and one with diamond-shaped snakeshead terminals. It might be supposed that, due to the system of production in many small workshops, and the isolation of these workshops from one another, regional variation is merely a result of the mode of production, rather than an active choice by the wearers of the objects. However, all these women would also be likely to be wearing items which were found throughout the western Empire and which had more general 'Roman' connotations, such as glass beads of other types. This shows that the regional variants among the bracelets are not due to any purported isolation of these areas from one another. Contact between the different areas is obviously frequent and, as well as those bracelet types in Raetia or Britannia which are restricted to a very small spatial area, there are others which have wider regional distributions in east or west, and both military material and many types of beads are universally found. If preferences for material were homogenous throughout the Empire, there is no reason to suppose a homogenous culture would not result. Can the wearing of different bracelet (and occasionally bead) types in different areas be understood as a positive affirmation of regional identity? Could this also be an expression of ethnicity? In this thesis, the term 'regionality' rather than 'ethnicity' is preferred, since it is impossible to know to what degree those wearing regional items of dress identified themselves as belonging to a particular ethnic group, and whether this specifically correlated with material culture. However, the differentiation of regions through dress accessories indicates that any specific and universal 'Roman' culture was less pronounced in low-status items, and does indicate different cultural preferences in different areas.

Since the archaeologist can distinguish between people according to their dress, these differences must have been far more striking to those living in the period; firstly because the imperfect archaeological record obscures much of the data which would then have been in evidence (clothes are the obvious example), and secondly because the language of signifiers would have been immediately understood. The importance of material objects in conveying information is stressed in chapter one. The presence in the West of small groups of people who can be identified as coming from the Danube area or Pannonia specifically shows that a clear expression/reflection of regional identity is visible to the archaeologist today and therefore must have also have been visible in late antiquity. Customs such as the wearing of many bracelets on the left arm by juveniles (only found in Pannonia) are particularly distinctive regional signifiers, implying as they do a divergence in symbolism of the object. The preference for individual types of bracelets and different modes of wearing them may or may not have been a conscious expression of ethnicity or regional identity. However, since regional differences exist, and there was no strong pressure towards conformity (Empire-wide fashion) in the appearance of objects such as non-precious metal bracelets, inevitably any differences must have been to an extent a



choice by the wearers and could have been used by those outside the group to categorise those within it.

Differences in material culture in any case would only actually become significant at the moment of contact; it is only at this moment that there is any opposition, something to be different *from*. Of course, even though in some cases those who have travelled from one area to another can be identified through their distinctive material culture, there is no guarantee that those who settle in another area will continue to wear items which mark them out as different. Most obviously, they may no longer have any access to the material culture of the area from which they came; children born in the new area cannot be endowed with these objects. An example might be the Lankhills foreign graves. The grave rite, juvenile females wearing many bracelets on the left arm (which may also have been how the bracelets were worn in life), is Pannonian though the actual material culture used to express this custom is British - all the (copper alloy) bracelets are British types. Conversely, the wearers may simply choose to assimilate more quickly into the resident population by adopting items and dress/burial customs favoured in these areas - in this case they would become invisible from the local population. Either practice would have the effect of eventually removing obvious cultural difference within one area (in this example Britannia) and homogenising the local culture, thus perpetuating the distinctive regional aspects of the types of objects worn in that area.

Of course, items which may at one point have been quite specific ethnic or regional markers may lose this identification as time passes. This is suspected to be the case, for example, with opaque annular trail beads, or diamond faceted beads, both of which may once have indicated an origin beyond the frontier for the person wearing them (they are found only outside the Empire in the third century and earlier, see chapter 3, 71). By the late fourth century, however, they were becoming assimilated into 'late Roman' culture - and ceased to have any particular resonance, or at least none that the archaeologist can detect. In this case, there must have been a factor operating which prevented the disappearance of these types, as described above, and stimulated their production in new areas (e.g. opaque annulars at Trier) and their widespread popularity. Although bracelets confirm the tendency for regional identity to be expressed through female dress, whether actively or passively, the bead distributions show that in this object type there was much less regional variation. Bead types are quite homogenous through the study area, with the same types being popular in the same colours everywhere, apart from some colours of square cylinder and hexagonal cylinder bead which do show regional bias. Beads, whether on necklaces, earrings or bracelets, may therefore have connoted the underlying accepted (unconscious?) 'provincial Roman' identity present throughout the study area (which is what it indicates to the archaeologist), even if this could sometimes be subverted by their inclusion in a regional object type (e.g. wire bracelets with threaded glass beads found in the Danube area). These differences in the degree of regionality exhibited by different object types follows Jones' suggestion (Jones 1997) that only one or a few aspects of material culture are generally used to signify (ethnic) identity (see also chapter 1, 31-2). Homogenous culture is more likely to vary chronologically through time and to be a social status marker (see chapter 1, 29-30),



which could explain the adoption of Germanic items such as opaque annular beads and blue diamond faceted beads relatively late in the fourth century (Germanic style being fashionable, see chapter 1, 22).

### SIGNIFICANCE OF REGIONAL VARIATION IN MALE (MILITARY?) DRESS

Male objects are coloured so much by military associations that it is impossible to separate the two. An item of male dress which was purely civilian might provide an interesting contrast to the patterns discussed here. From the known historical and art-historical evidence (see chapter 1, 17-18), taken in conjunction with the distributions of crossbow brooches and some types of buckles and belt fittings which have a strong association with the limes, the working model that these were military can continue to be used. (Bead and bracelet types with limes distributions shows that this alone does not conclusively signify a military object.)

There is some evidence of regional patterning in male/military objects. This seems to be always connected to typological variation through time, and regional areas move in and out of focus during the fourth century. The necessity for conformity in objects which were a symbol of Roman military (and later civilian) status was discussed in chapter one. Regional types of crossbow brooches appear in different places and they are replaced by standard types produced in one place. This transference of manufacture in smaller workshops to centralised production represents, on a practical level, the requirement by the Roman state for a universal military signifier.

Early crossbows of type 1 with egg or cone shaped knobs and a double cuff to the base of the bow are regional to Raetia/Noricum, for example. These brooches do get further afield in some numbers (and notably have a wider distribution than snakeshead bracelets with type 10 terminals worn by women which show a similar Raetia/Noricum restriction). Type 1 brooches with specific bow and foot decoration also have a distribution restricted to the east, which spreads out further west through time. Type 1 brooches in other areas are very varied in appearance and may also have been produced quite locally in each area (supported by metal analysis, see chapter 2, 58-62). However, this developing tendency towards regional variation in the appearance of crossbow brooches was ended by the issue of type 2ii brooches of uniform appearance in large numbers from the east (see chapter 2, 58-62), which were sent to all areas of the west (and which were probably the precursors of type 3/4 brooches). With the production of type 3/4, for much of the remainder of the fourth century a soldier would have possessed a distinct 'military' identity signalled through dress and dress accessories. As Braun (1995, 126) discusses, objects worn enable the observer to place the wearer within a certain and readily identifiable category. An instantly recognisable 'military' identity as expressed through dress is at its most homogenous during the production of type 3/4b brooches, which are the most frequently occurring type in all areas and must have been produced in huge quantities, and most of which conform to an extremely limited range of possible decoration. The zenith of uniformity may be suggested to be around the time of production of type 3/4b brooches with b2, b4 and b5 foot patterns. In particular, the correlation between b4 foot pattern (3/4b dated to 350-410 A.D.) and



buckles of Sorte 1 Form A (290-410 A.D.) at the same sites along the whole of the limes and in Belgica (above, fig. 269) attests to an extremely well-functioning set of military signifiers which had no regional connotations.

Correlation of type 2ii with b2 foot on type 3/4 has already been discussed above. There is also a distinctive and widespread military burial rite (Nik Cooke, pers.comm.). During the time span of production of type 3/4 only Lugdunensis and Britannia show more varied foot patterns and fewer type 3/4 brooches in general. However, there is no distinctive regional offshoot in these areas. As mentioned in the first chapter, and above, non-deliberate spatial variability of this kind might indicate less state authority in these areas, since the appearance of the object sanctioned by the state is not being closely controlled. In this most uniform phase of military culture, military troops in Lugdunensis and Britannia were not wearing crossbow brooches in the same numbers as in the other provinces. The brooches they were wearing were probably copies (with style drifting somewhat), made in the west, of those issued from the official supplier in the east. (For example, metal analysis of a Richborough type 3/4 crossbow brooch of idiosyncratic appearance shows it to be made from a different alloy than the standard type 3/4 brooch dominant in Pannonia, see chapter 2, 58-62.) Finally, the minority of 'standard issue' type which do reach Britain show a spatial divergence in patterning which suggest a different distribution mechanism (above). The relative failure of type 3/4b in Britannia may have been caused by problems of supply or a lack of demand. Whatever the reason, it shows that this area was not subject to the central authority of the 'Roman Empire' in practical and by implication ideological terms in the same way as the heavily militarised limes provinces were in this period.

Type 2 crossbow brooches diverge, as mentioned above, and it is suggested in the crossbows chapter that type 2iii (also found in silver and gold as well as copper alloy) develops into higher status (gilt copper alloy and gold, sometimes niello inlaid) type 5 and 6 brooches in some area of the West (Trier seems the obvious place but there is no specific evidence to suggest here rather than somewhere else). The very high status of these brooches can be adduced from such features as portrait medallions of the Emperors (found on type 5) and the wearing of a type 6 brooch by Stilicho, head of the army in the west (see chapter 2, 57) as well as the materials used. Typological development was suggested in the first chapter to be related to social status and the constant redefinition of this status. With such large numbers of type 3/4 brooches issued very widely to military troops, there would have been a demand for a crossbow brooch of a distinctively different appearance which could be worn by high status military and civilian officials. The continued development of type 2 into types 6i and thence 5i, 5ii and 6ii shows this transformation and it may be significant that this occurs west of the Rhine where there may have been a stronger demand for high status markers (the administrative capital is at Trier in Belgica). Again, what began as an (unconscious) move towards a regional identification through crossbow brooches (type 2iii) becomes the wider distribution of types standard in appearance (types 5i and 6ii) and possibly more closely regulated by the state, though via the regional development of type 6i (found only west of the Rhine particularly at Augst). The regional offshoot type 5ii found around the Channel coast may exhibit the same loss of control by the Roman



authorities over an official Roman symbol as discussed above for type 3/4 in Britannia and Lugdunensis.

From the very late shift of type 6 crossbows away from the Rhine frontier and further west (especially to the far west in Lugdunensis), compared to type 5, still found on the limes and the Meuse-Sambre line at a slightly earlier date, it was suggested in chapter 2 that either there was a general late movement away from the limes, or that crossbow brooches had changed in function by this time and were now more status markers of high civil rank rather than items denoting the high status military. It can be seen from the buckle distributions that there was still activity in the limes area and other strongly defended areas in Germania during the time of production of type 6 (chapter 5, 108-9, and below); therefore crossbow brooches of type 6 may have finally lost their primarily military associations. With the cessation of production of type 3/4 in the east (410 A.D.) when the frontiers here collapsed, there would be no copper alloy crossbow brooch type to be worn by soldiers remaining in the west who were not of high status. Crossbows of this type did not then begin to be produced in the west so it must be assumed there was no demand, or problems of supply could not be overcome.

It was discussed in the first chapter that the crossbow brooch was explicitly used by the Roman authorities to signify membership of the army or the administration. This conscious use of objects as signifiers inevitably means that when the object is no longer used there may be a breakdown of expression. Despite the fact that crossbow brooches are no longer being produced in large numbers to be worn by the military, there are certainly still military sites and fortifications in the west (e.g. Vireux-Molhain, Böhme 1985b). If there were no continued demand for crossbow brooches, it must be the case that the military were no longer under the same compulsion to explicitly identify themselves with Roman official authority in the west (by using crossbow brooches). Unless they were explicitly using something else, which had a clear symbolism of Roman authority, those viewing them would tend towards no longer making this specific identification with Roman authority. If on the contrary, and perhaps more likely, there were demand for crossbow brooches which could not be met due to problems with supply, the same failure to recognise military personnel as 'Roman' - i.e. with authority under the Roman Empire – would eventually occur, and the army by the mid fifth century would by default rather than active choice become something else. Conkey (1989, 5-18) and Hodder (1982, 185) discuss changes in the analysis of style, which has altered from a statement that the style of an object is a passive expression of meaning, to one in which style is viewed as more active, participating in the construction of meaning rather than its mere reflection. Relating this to the above example, the end of crossbow brooch production could actively contribute to the transformation of the Roman army and the loss of its Roman identity. Any model is, however, likely to be simplistic. Archaeologically, there is no evidence that some other object replaced the crossbow brooch, since the remaining military buckles and belt fittings were no longer being produced under close control by the state, and had themselves taken on a regional character by this point which may have overtaken their 'Roman' identification.



Buckles do not seem to have had the same restrictions on production of specific forms and decoration as the crossbow brooches, although there are types which are universally found. Later in the fourth century, it would have been possible to distinguish between those serving on the Rhine and those on the Danube during, for example, the timespan of production of Sorte 1 Form E (364-407 A.D.), taking into account variations in decorative detail and the number of pieces making up the belt set (Böhme 1974, 90). However, there still seems to have been a general specification which had to be conformed to, with, for example, Sorte 2 dolphin head buckles showing different regional interpretations of basically the same type. These differences seem small, but it is likely that they were more visible to those wearing the objects than they are to the archaeologist today and it may be the case that, as with the female objects, one type of object is signifying 'Roman' identity and another a more regional identity. As the Roman identification of the common soldier lessens (with crossbows eventually being worn only by high status military and civilian officials), the regional nature of buckles and belt sets becomes more pronounced especially into the fifth century. The possible production of regional types of buckles and bracelets in the same workshop also signifies an end to controlled production by the Roman state and a shift to smaller local production and distribution. Why did the change from centralised to regionalised production occur? From the evidence for type 3/4 crossbow brooch production, it seems that these ceased to be made when pay to the Roman army stopped (when presumably the state-run 'fabricae' also stopped production) which is associated with the end of the Roman Empire in the west. Eisenstadt (1988, 237) says that 'collapse is only an extreme case of the restructuring of boundaries of social and political systems'. This restructuring will inevitably include the boundaries represented through material culture, especially in those items directly related to the military. If there is a breakdown in production systems, buckles and belt fittings may become unintended signifiers of regionality, as the local workshops attempt to fill the gap in supply by the production of belt sets imitating those produced on a larger scale. However, the cessation of large scale production may itself also be associated with changes in demand; in any case, as discussed above, this change in the material would have the inevitable effect (whether intended or not) of altering the way in which the wearers were perceived by others both within and outside their particular social milieu, and the way in which they perceived themselves.

Hence the appearance of spatial variability in buckles, and the cessation of mass production of crossbow brooches, are certainly a direct result of changes in the production system, but this is also directly related to demand in a dialectical exchange in which it is impossible to isolate a single cause or effect.



## IMPLICATIONS FOR THE LATE ROMAN EMPIRE

Objects are found to be structured by the geographical, social and political realities of each area. In turn, the use of objects in the active negotiation of identity, such as the wearing of crossbow brooches to signify civil or military authority under the Roman state, highlights their active role in the structuring of everyday 'reality'. Homogeneity of culture in the Roman world was imposed either from the top down (a standard issue of symbolic signifiers of Roman authority) or from the bottom up (the Roman-style civilian object has become an accepted and unconscious signifier of participation within the Roman world). The 'accepted' ideology is both imposed, questioned and redefined by the material culture of the fourth century.

Across the Western Empire a narrative can be constructed for each provincial area through its material culture which prefigures its individual destination in the post-Roman west. The collapse of the Roman Western Empire is shown in freeze-frame detail as the objects worn by the military map the activity on the frontiers and the ultimate abandonment of the limes to new lines of defence. This tangible conflict is matched by an interior attrition as regional styles of object develop from what was originally 'Roman' material culture. Continued attempts by the Roman state to impose its authority are visible through, for example, the mass production of type 3/4 crossbow brooches of remarkable uniformity. By the end of the fourth century and into the fifth the appearance of regional patterning in male (military) objects, as the material culture of those in political control, may show an acceptance and authorisation of regional identity which remained more implicit when expressed through female material culture (bracelets) alone. The late shifts of material to the west, particularly the far west, and the proliferation of material still ultimately based on late Roman culture, show how changes in the fourth and fifth century, visible through the material culture of both the Roman military and the civilian population, prepared the way for the post Roman west as an area of continuing development with a strong legacy from Rome.

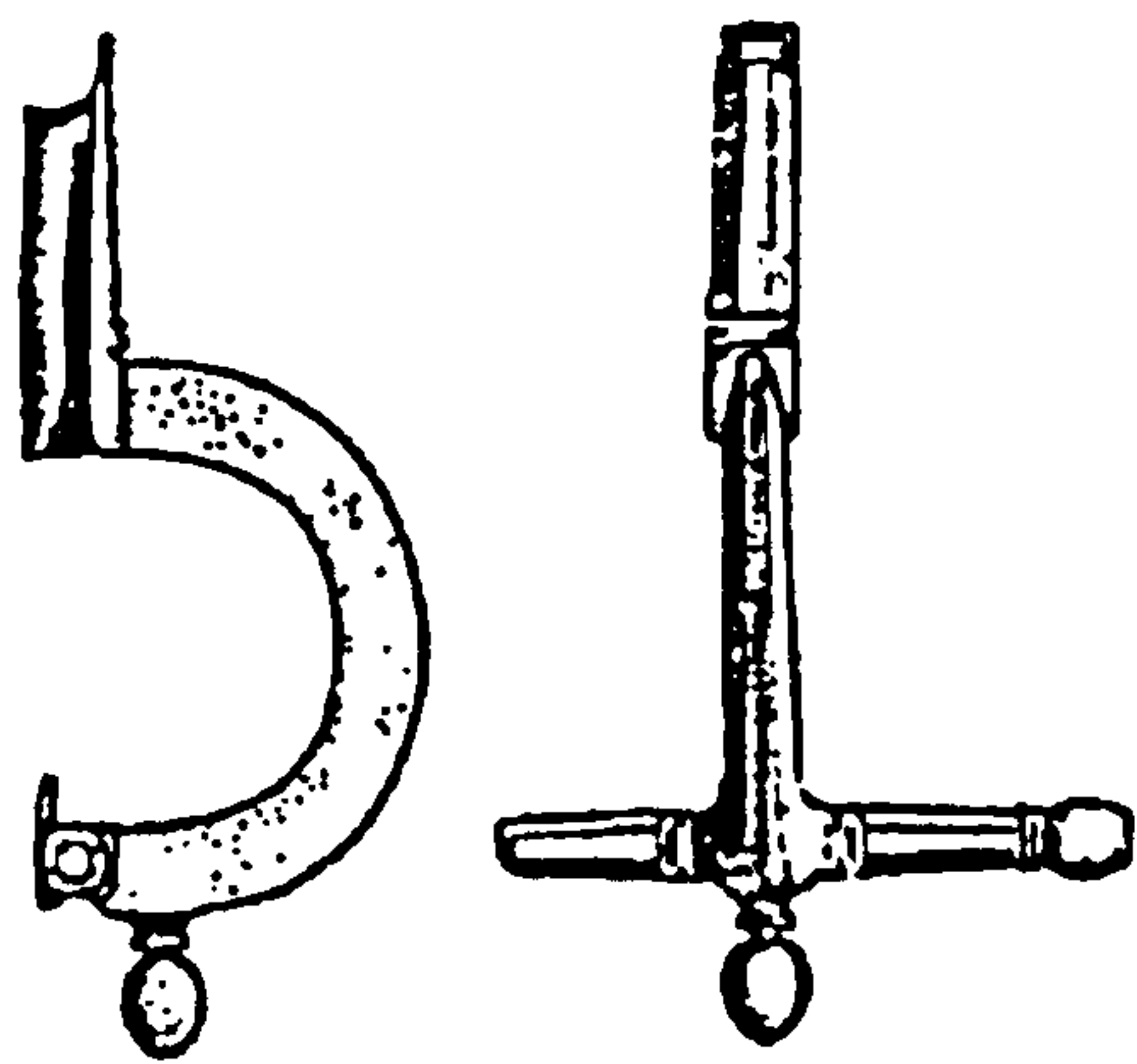
4th century blue diamond faceted beads

table F

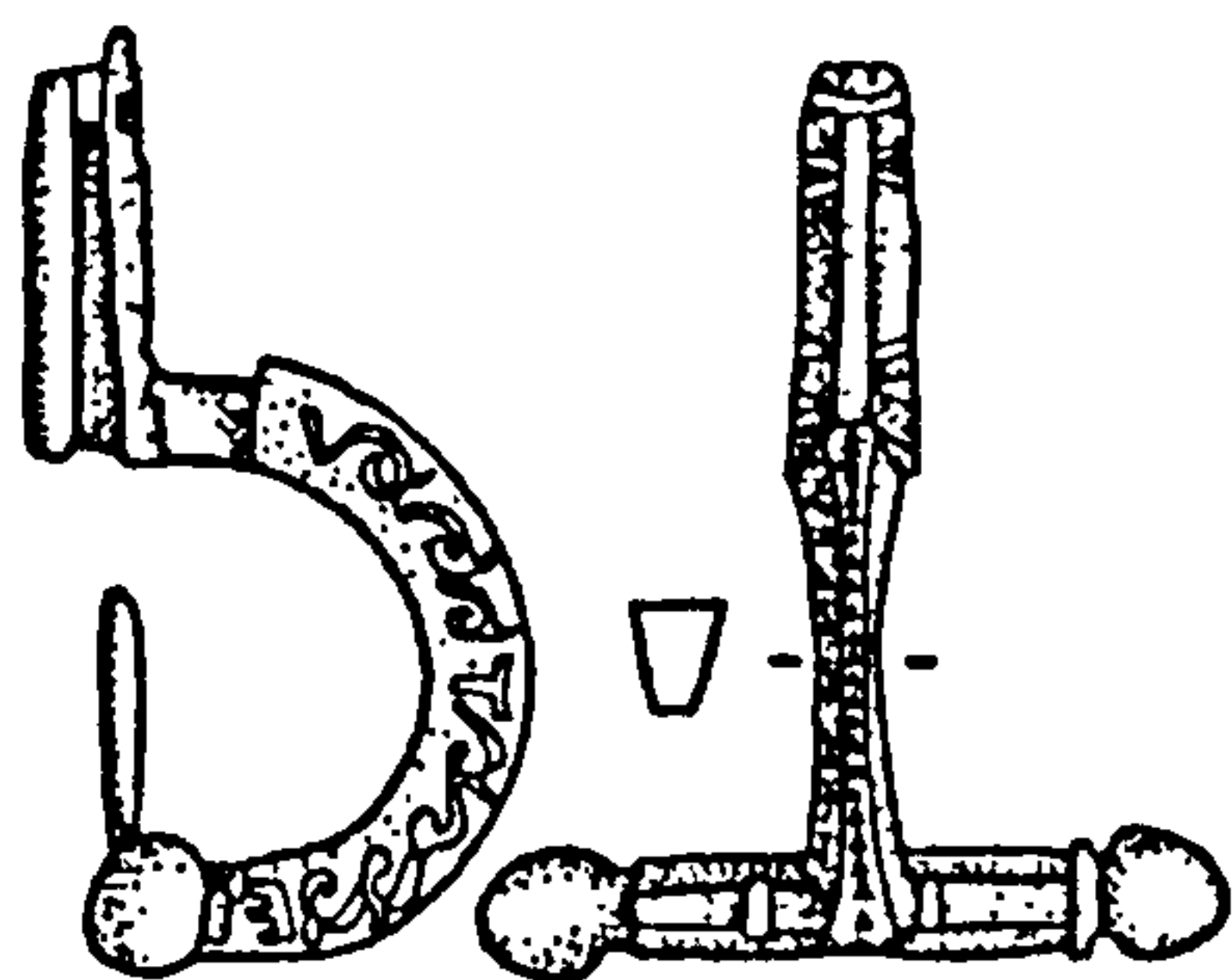
| Site reference                          | Date (A.D.)                  | Reference                      |
|---|------------------------------|--------------------------------|
| Villa d'Ancy t.206.36724                | Constantine                  | MAN St.Ger.                    |
| Bonaduz gr.138 Taf. 7 8                 | 350-400                      | Schneider-Schnekenburger 1980  |
| Girm grave 12 3a                        | beginning of the 5th century | Braun 1991/2                   |
| Girm grave 13 3b                        | end of the 4th century       | Braun 1991/2                   |
| Girm grave 5 1                          | end of the fourth century    | Braun 1991/2                   |
| Dunapentele grave 167                   | after 337                    | Bóna and Vágo 1976             |
| Dunapentele grave 36                    | after 364                    | Bóna and Vágo 1976             |
| Dunapentele grave 458                   | after 364                    | Bóna and Vágo 1976             |
| Dunapentele no.120                      | 330-400                      | Alföldi 1957                   |
| Keszthely grave 73                      | after 346                    | Sagi 1981                      |
| Kirchheim bei München grave 2 Abb. 4 14 | after 311                    | Keller 1989                    |
| Kirchheim bei München grave 5 Abb. 3    | after 305                    | Keller 1989                    |
| Krefeld –Gellep grave 1274              | mid 4th                      | Pirling 1974                   |
| Krefeld-Gellep grave 1470               | after 337                    | Pirling 1974                   |
| Krefeld-Gellep grave 1573               | 350-400                      | Pirling 1974                   |
| Krefeld-Gellep grave 2640               | 350-400                      | Pirling 1979                   |
| Krefeld-Gellep grave 2794               | 350-400                      | Pirling 1979                   |
| Krefeld-Gellep grave 2887               | mid 4th                      | Pirling 1979                   |
| Lankhills SF no.140                     | 350-70                       | Clarke 1979                    |
| Lankhills SF no. 363                    | 350-70                       | Clarke 1979                    |
| Lankhills SF no. 424                    | 350-80                       | Clarke 1979                    |
| Lankhills SF no. 436                    | 350-70                       | Clarke 1979                    |
| Lisieux sép.145                         | 375-400                      | Calvados Service d'Archéologie |
| Lisieux sép. 370                        | 375-400                      | Calvados Service d'Archéologie |
| Lisieux sép. 818                        | 375-400                      | Calvados Service d'Archéologie |
| Lisieux sép. 944                        | end 4th beginning 5th        | Calvados Service d'Archéologie |
| Matagna-la Grande 46c                   | mid-late 4th                 | Rober 1983                     |
| München grave 5 6                       | 333-366                      | Keller 1971                    |
| München grave 11 8                      | 350-400                      | Keller 1971                    |
| Potzham grave 4 10                      | 300-310                      | Keller 1971                    |
| Sagvar grave 131                        | after 337                    | Burger 1966                    |
| Sagvar grave 149                        | after 351                    | Burger 1966                    |
| Tongeren grave 37                       | 350-70                       | Vanvinckenroye 1984            |
| Tongeren plate VII 32                   | c.350                        | Vanvinckenroye 1995            |
| Vermand doubtful provenance 84953       | 4th-5th?                     | MAN St.Ger                     |
| Wessling grave 12                       | 333-366                      | Keller 1971                    |



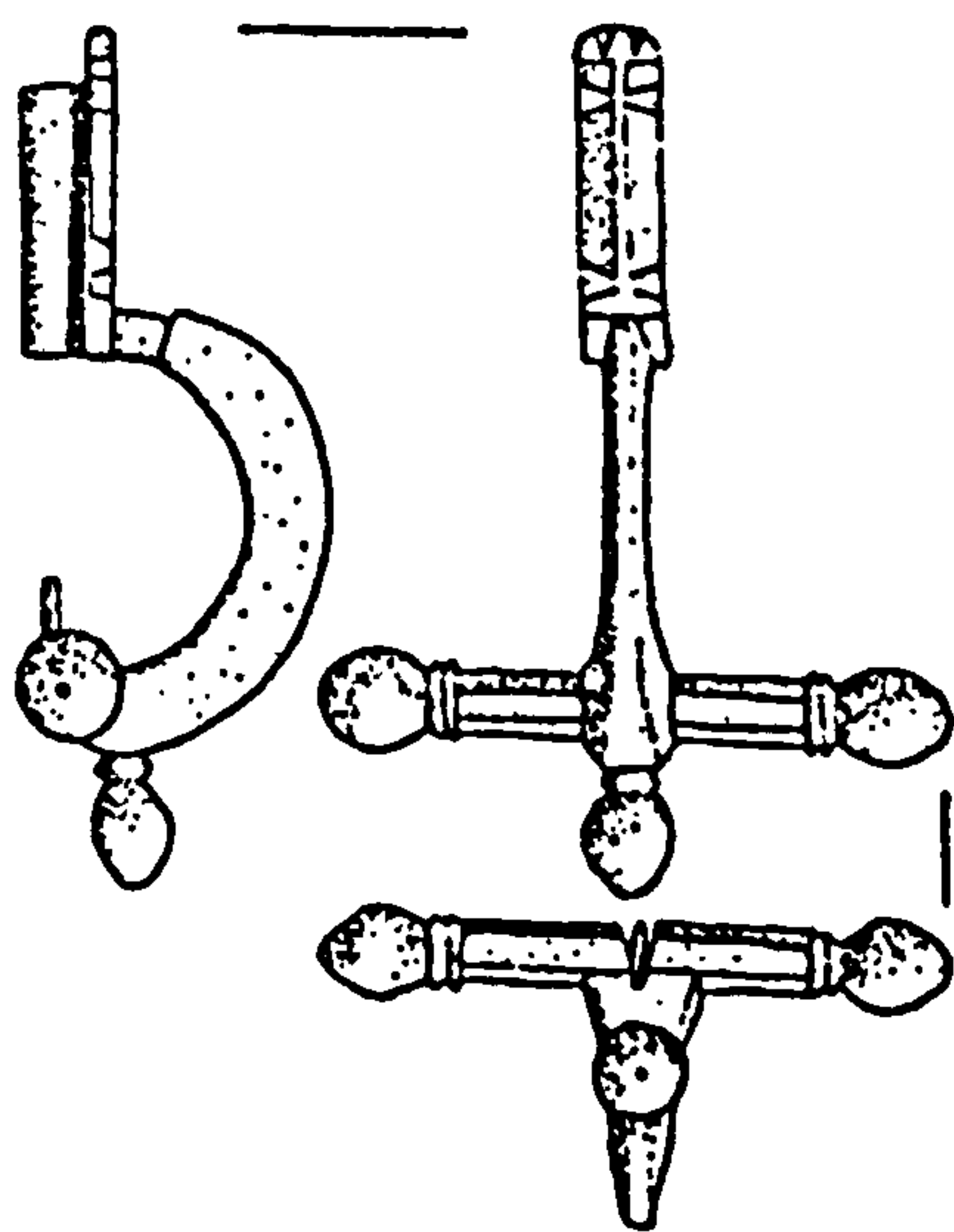
Type 1



Lorenzberg bei Epfach  
Werner 1969 taf.39 31

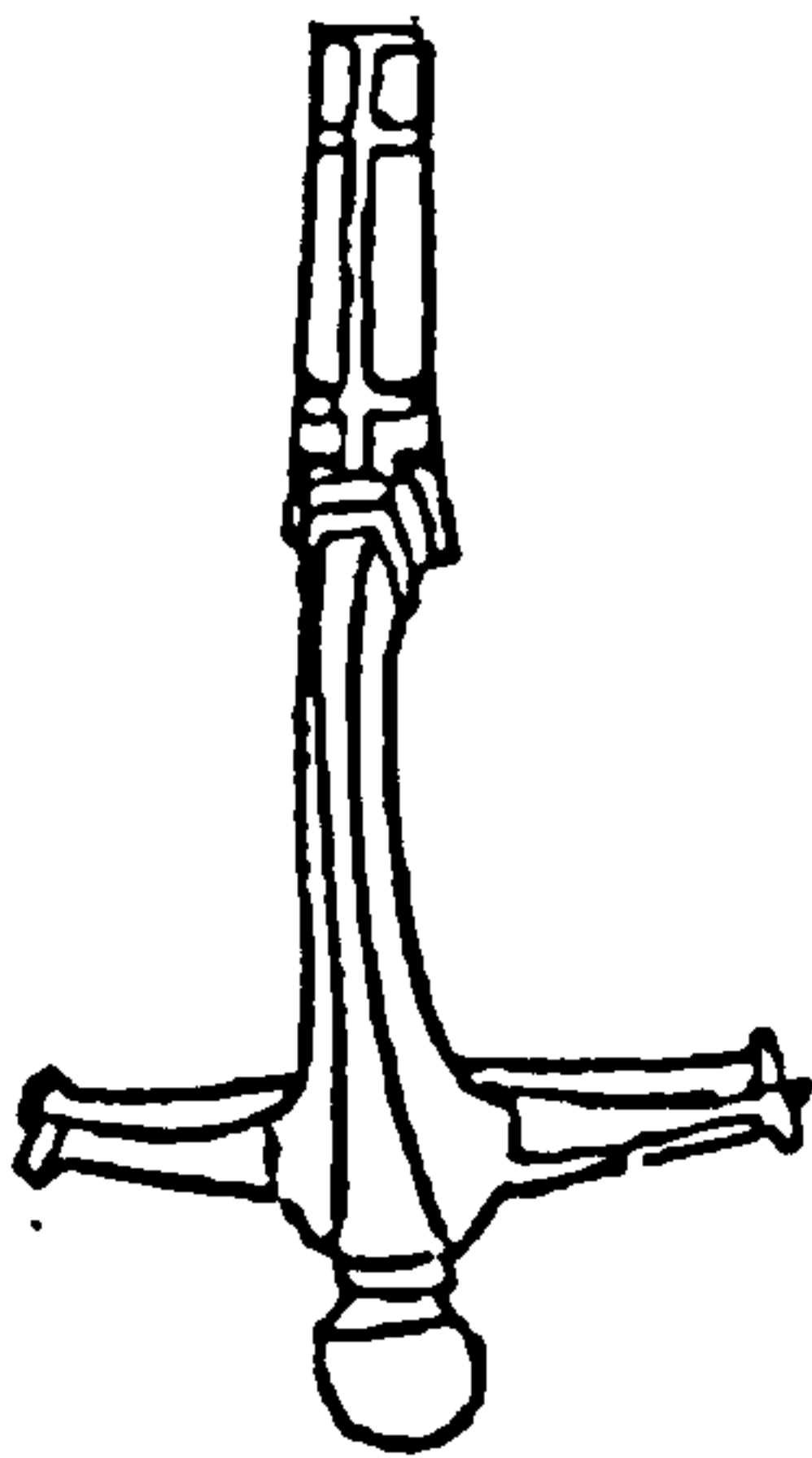


Lauriacum (Enns)  
Jobst 1975 no.235



Pfaffenhofen  
Keller 1971 taf.18 6

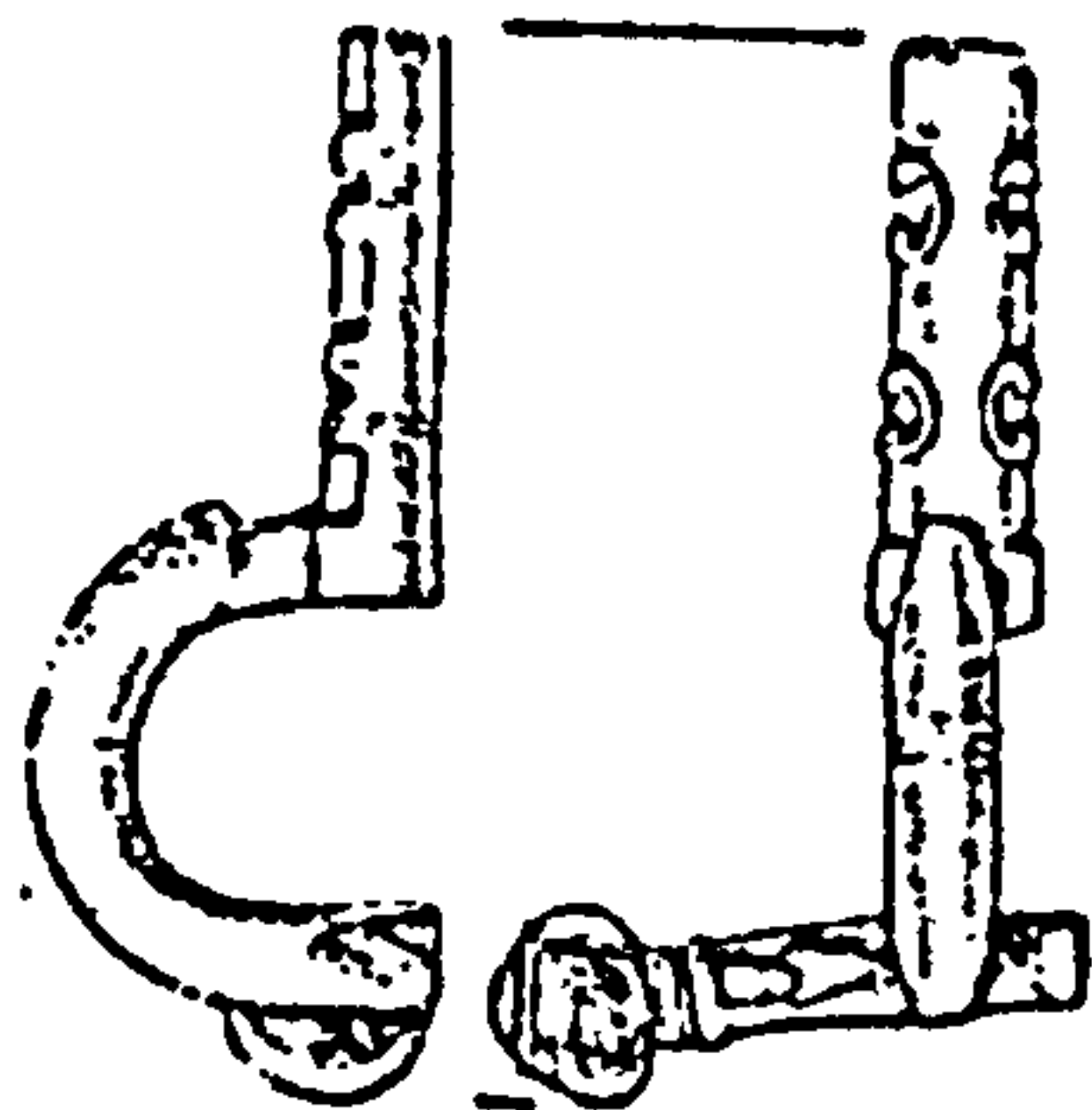
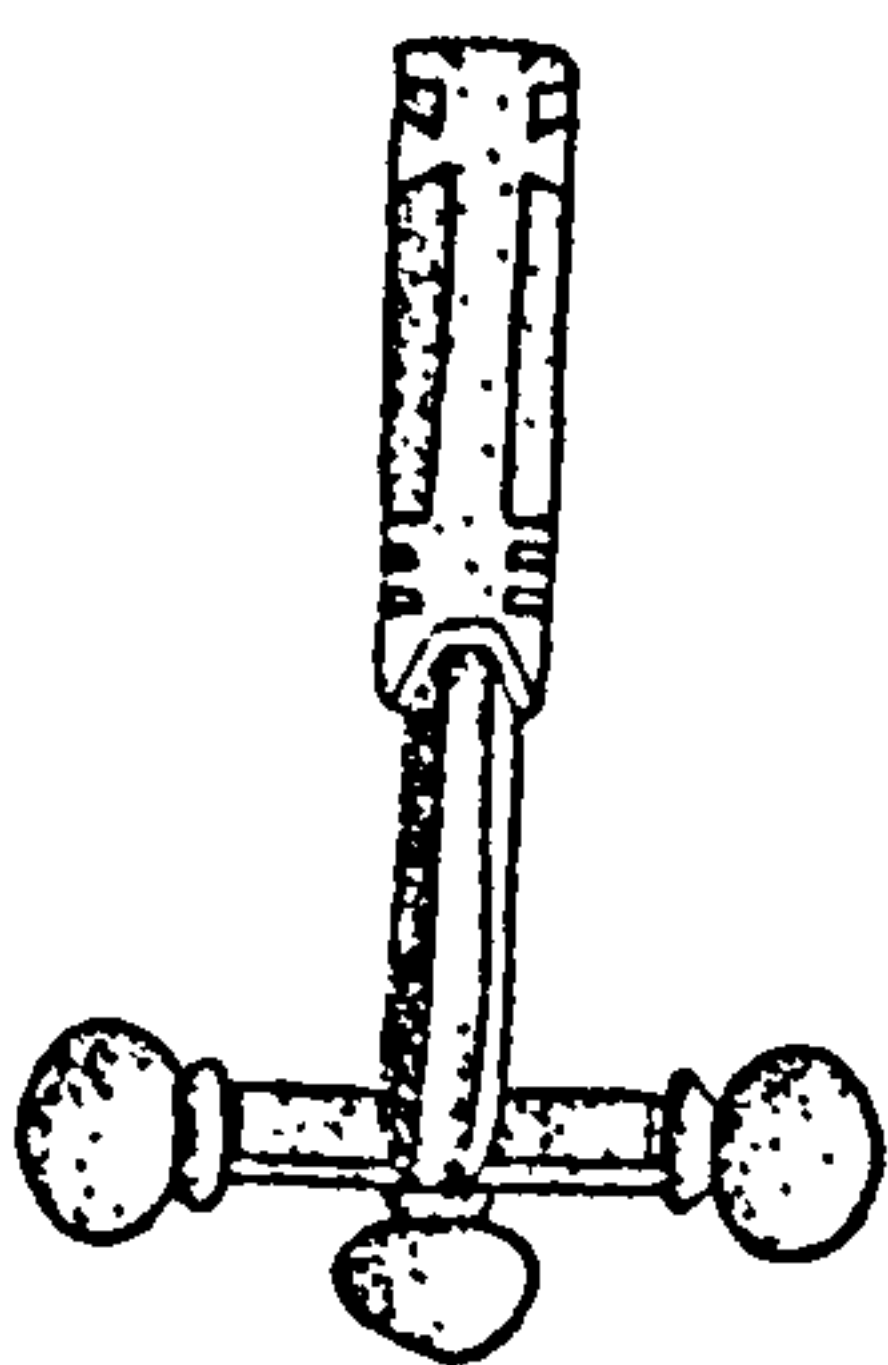
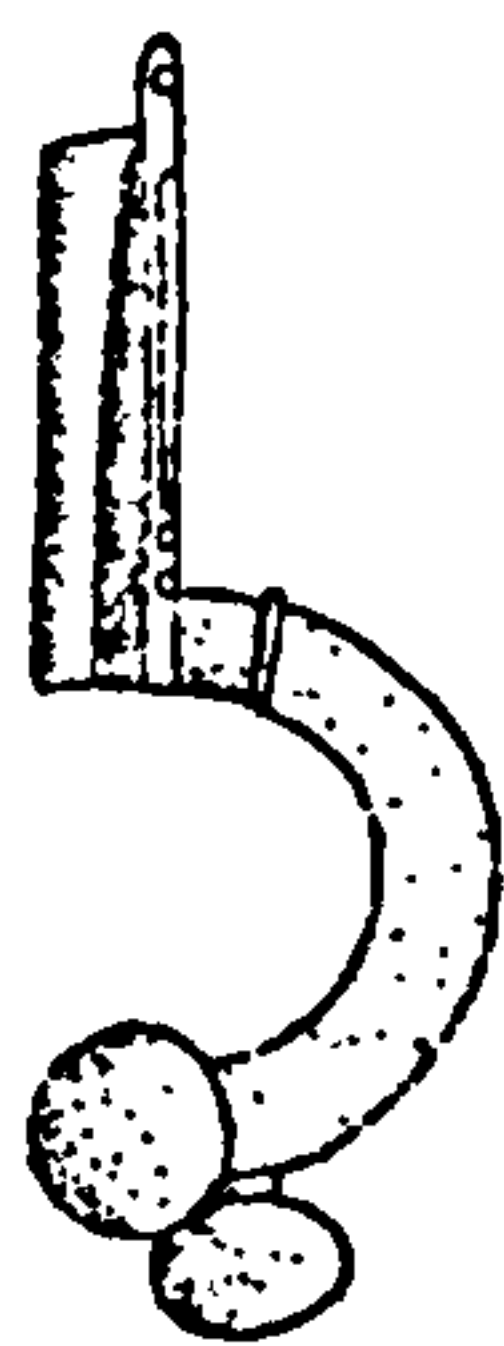
12



Mandeure  
Lerat 1956 pl.XIX 318

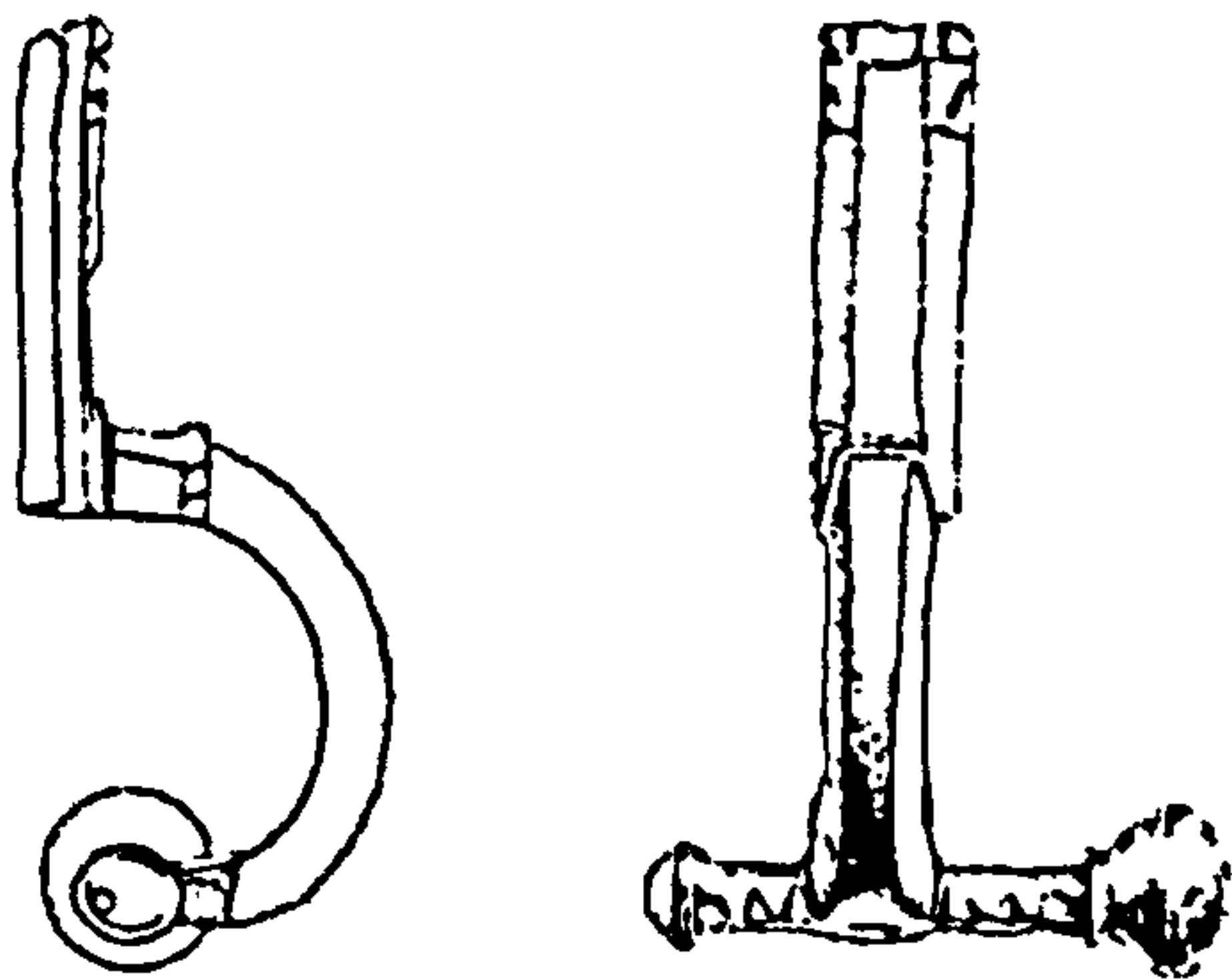
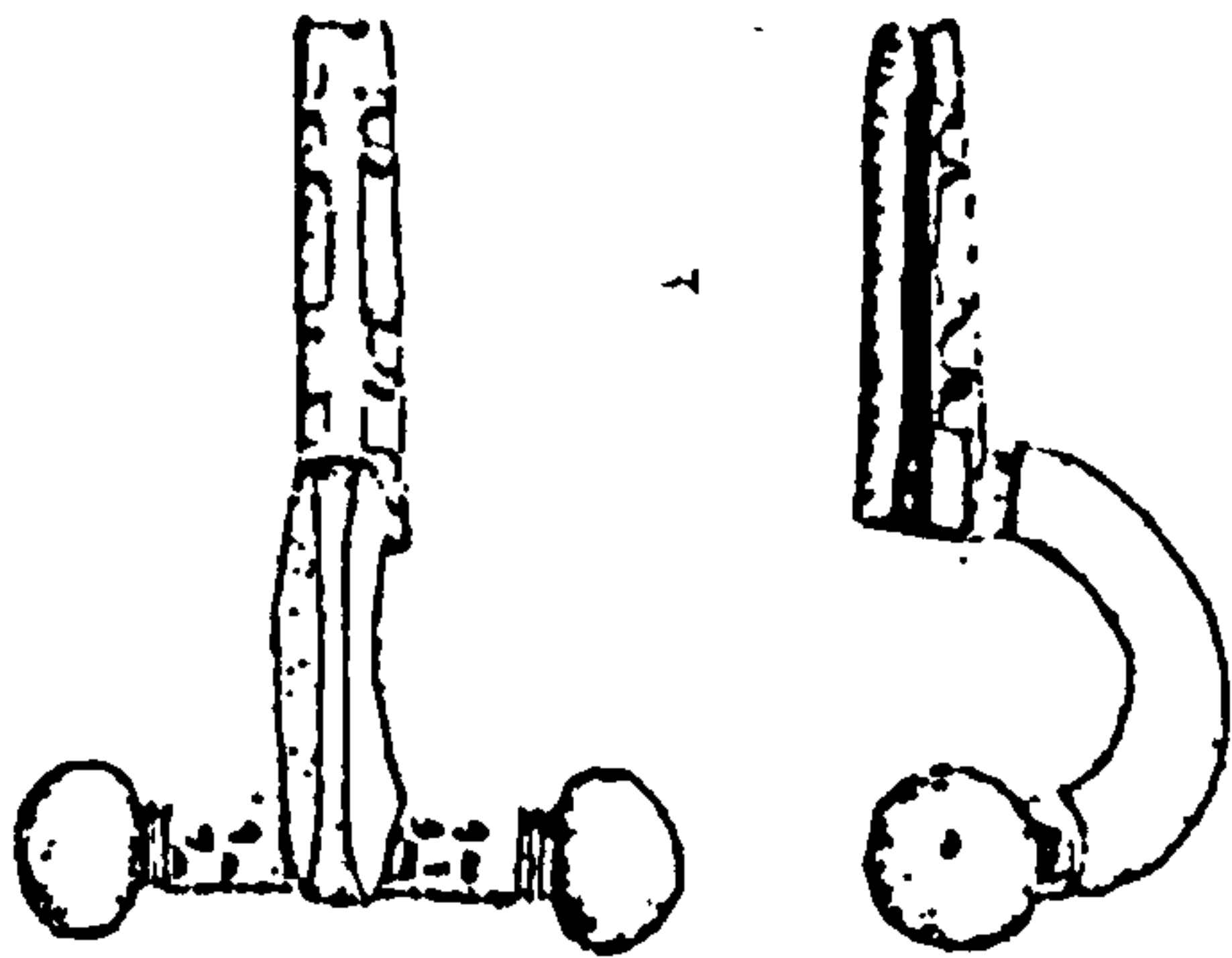
at varying scales

Type 2i



Günzburg  
Keller 1971 taf.12 1

Apetlon  
Adler ed.1982 abb.667



Zurzach  
Roth-Rubi & Sennhauser 1987  
grave 154

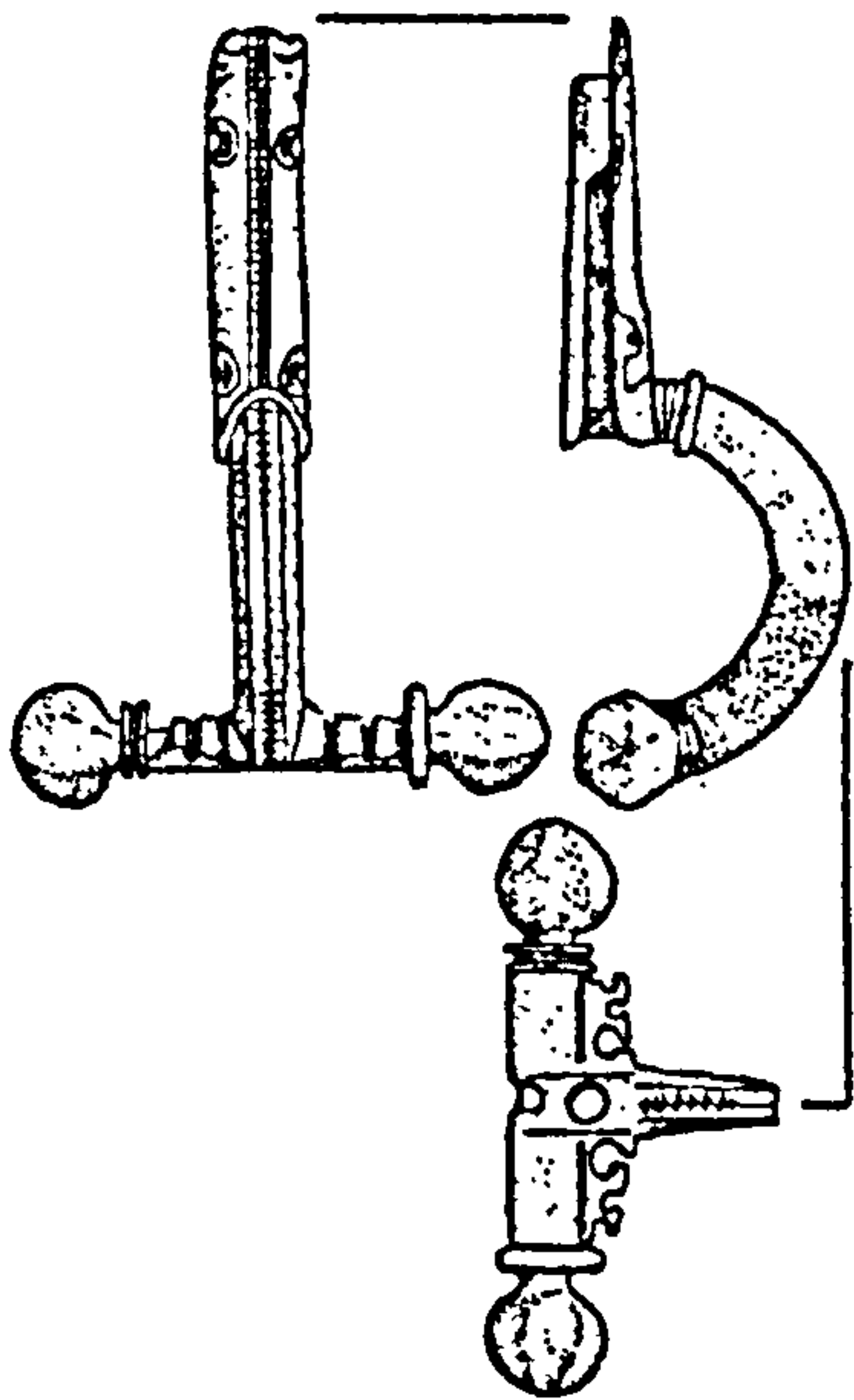
Windisch  
Meyer-Freuler 1989 taf.31 471

at varying scales

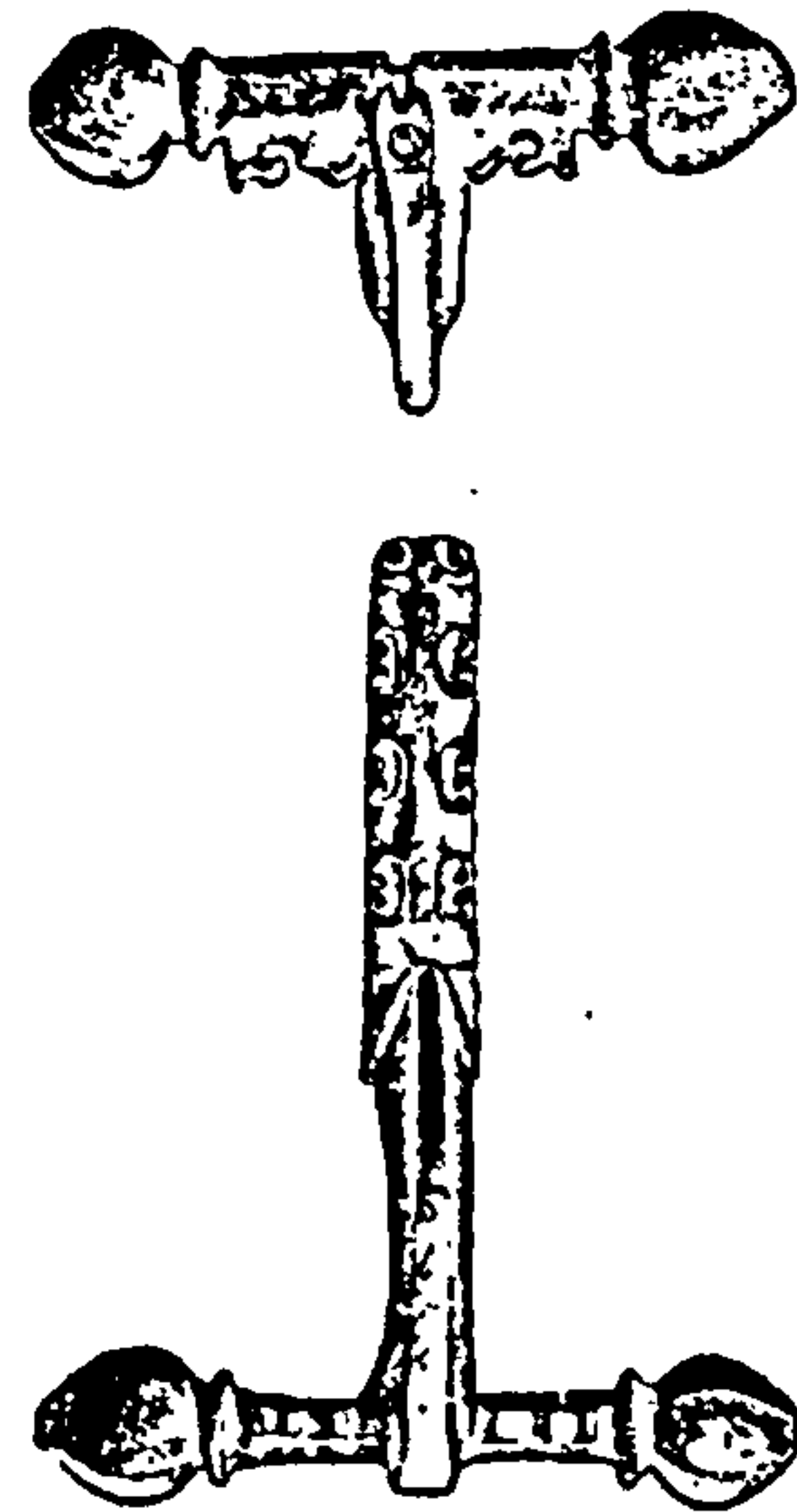


fig.3

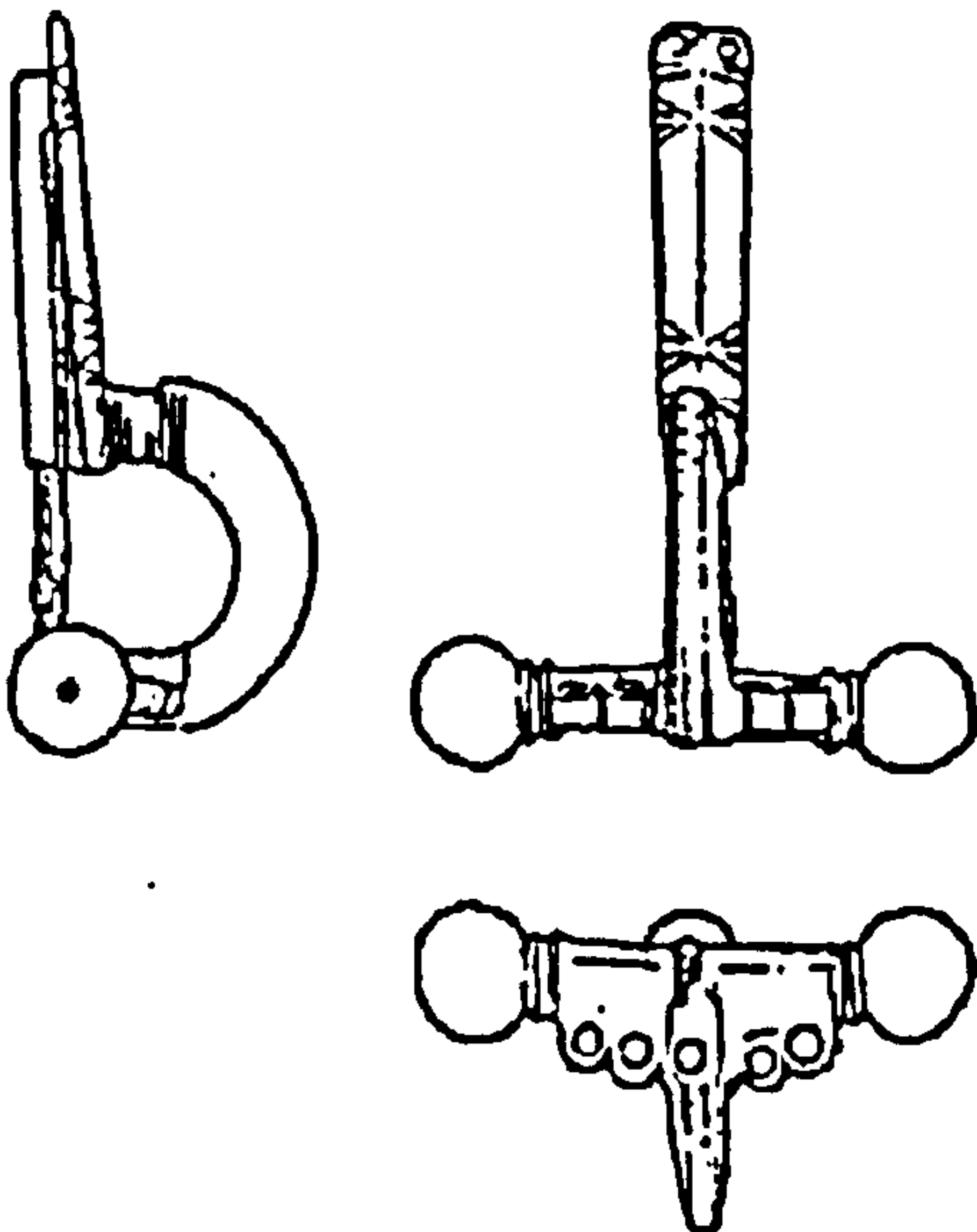
Type 2ii



Bregenz  
Overbeck 1982 taf.10 168

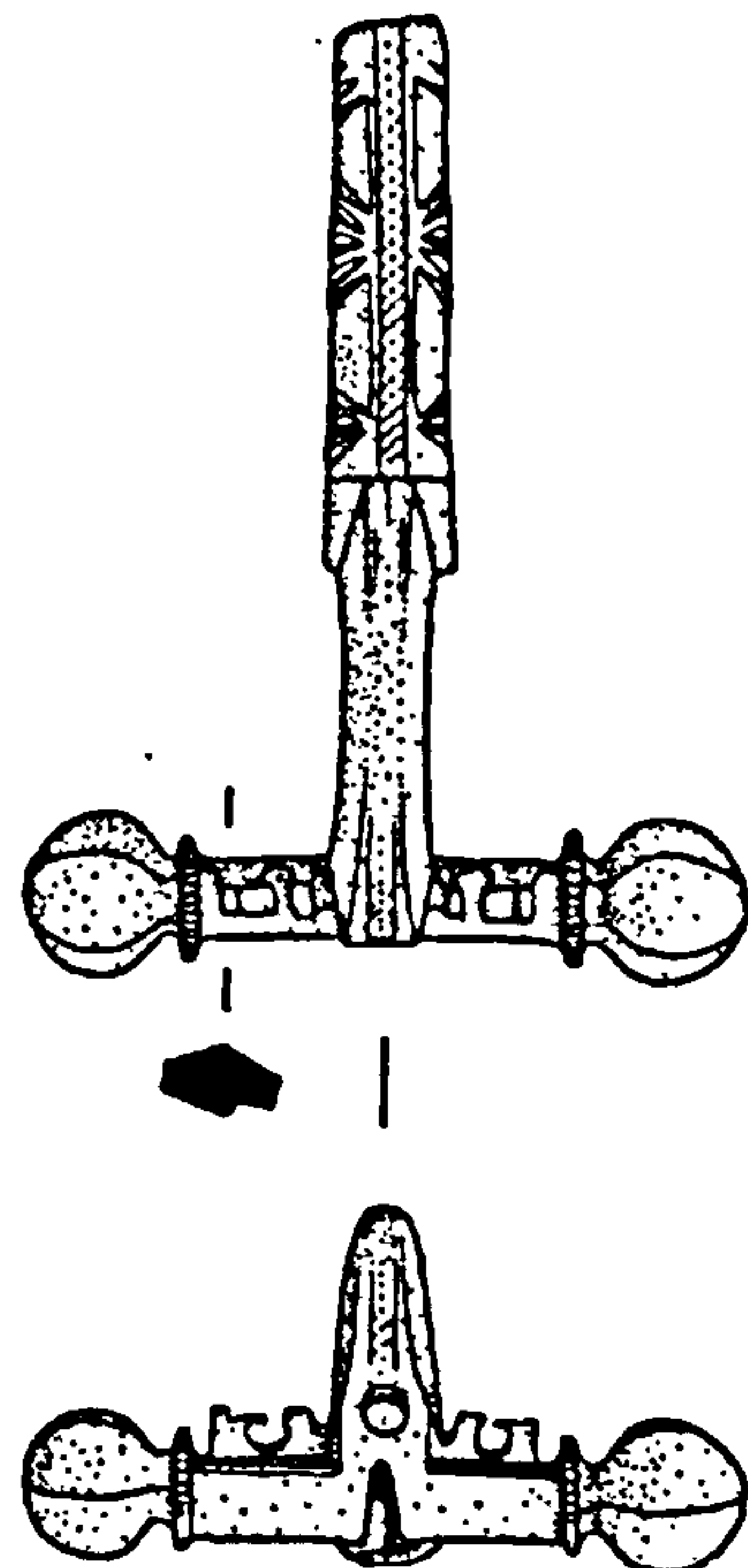


Augst  
Riha 1979 taf.55 1487



Neuberg an der Donau  
Keller 1979 taf.6 4

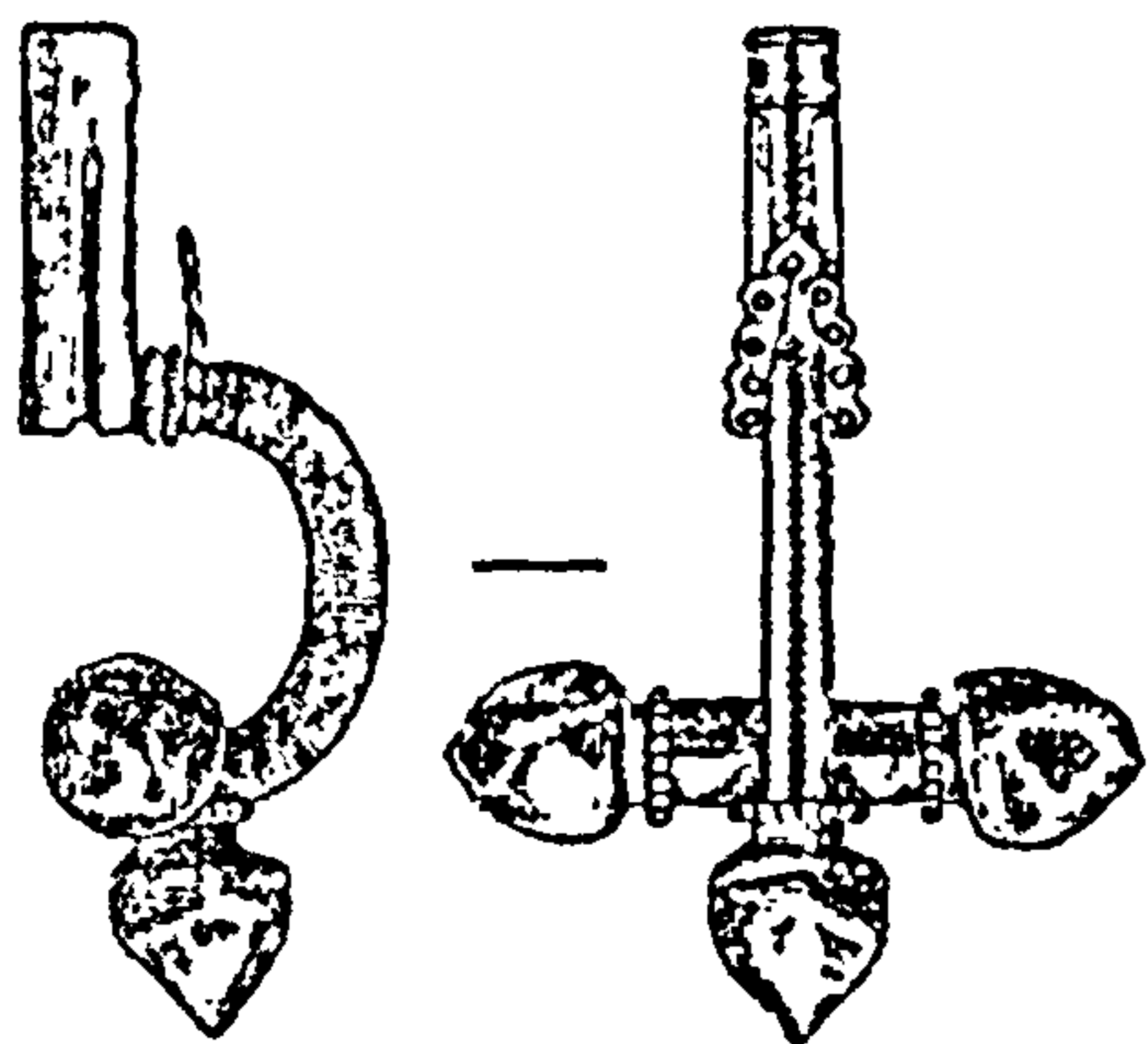
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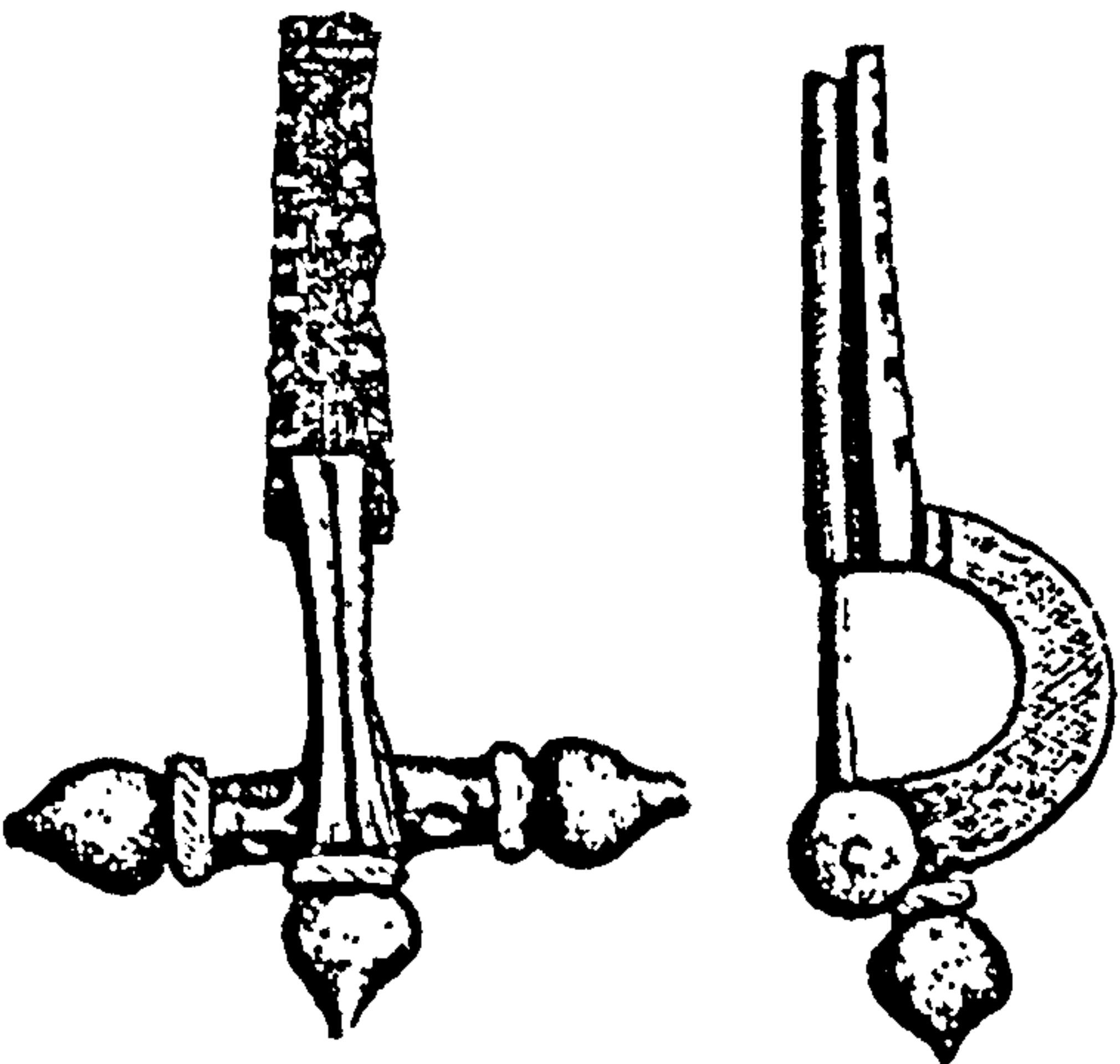
Chartres  
Maison d'archéologie,  
Chartres s.739 c77.7179.1

at varying scales

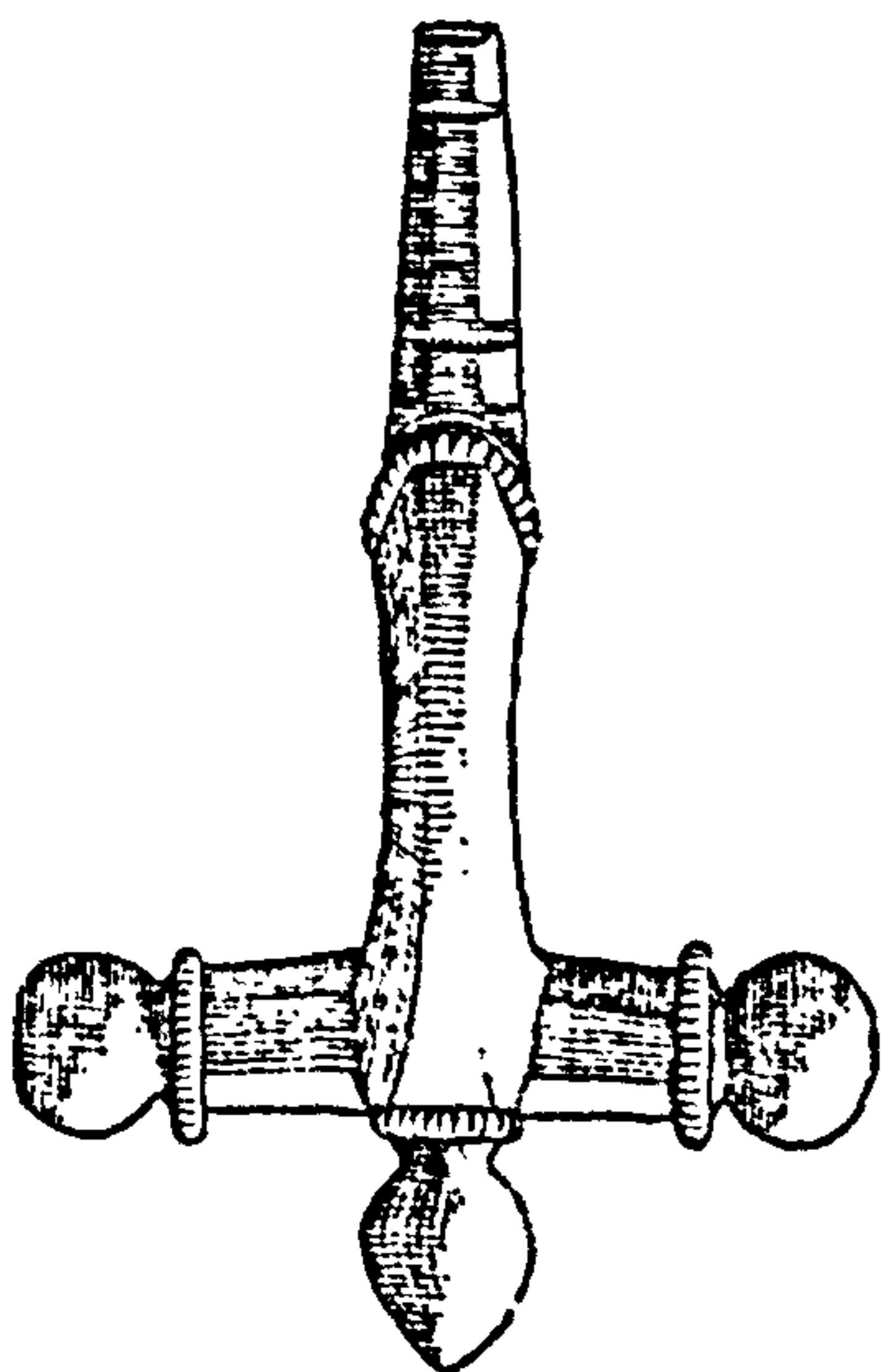
Type 2iii



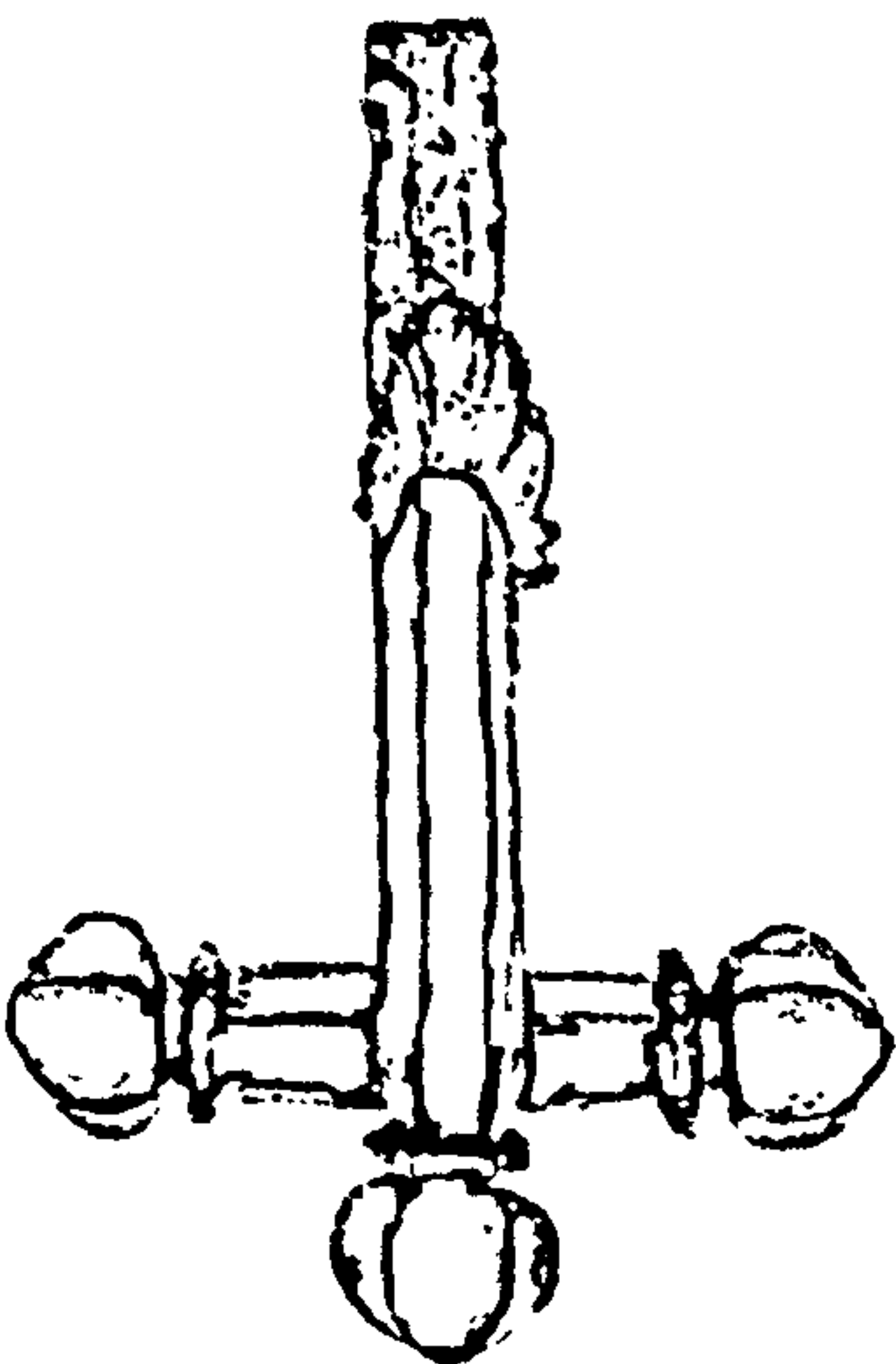
Odiham  
Brailsford 1951 fig.10 28



Krefeld-Gellep  
Pirling 1979 gr.2711 1



Lankhills  
Clarke 1979 SF.13

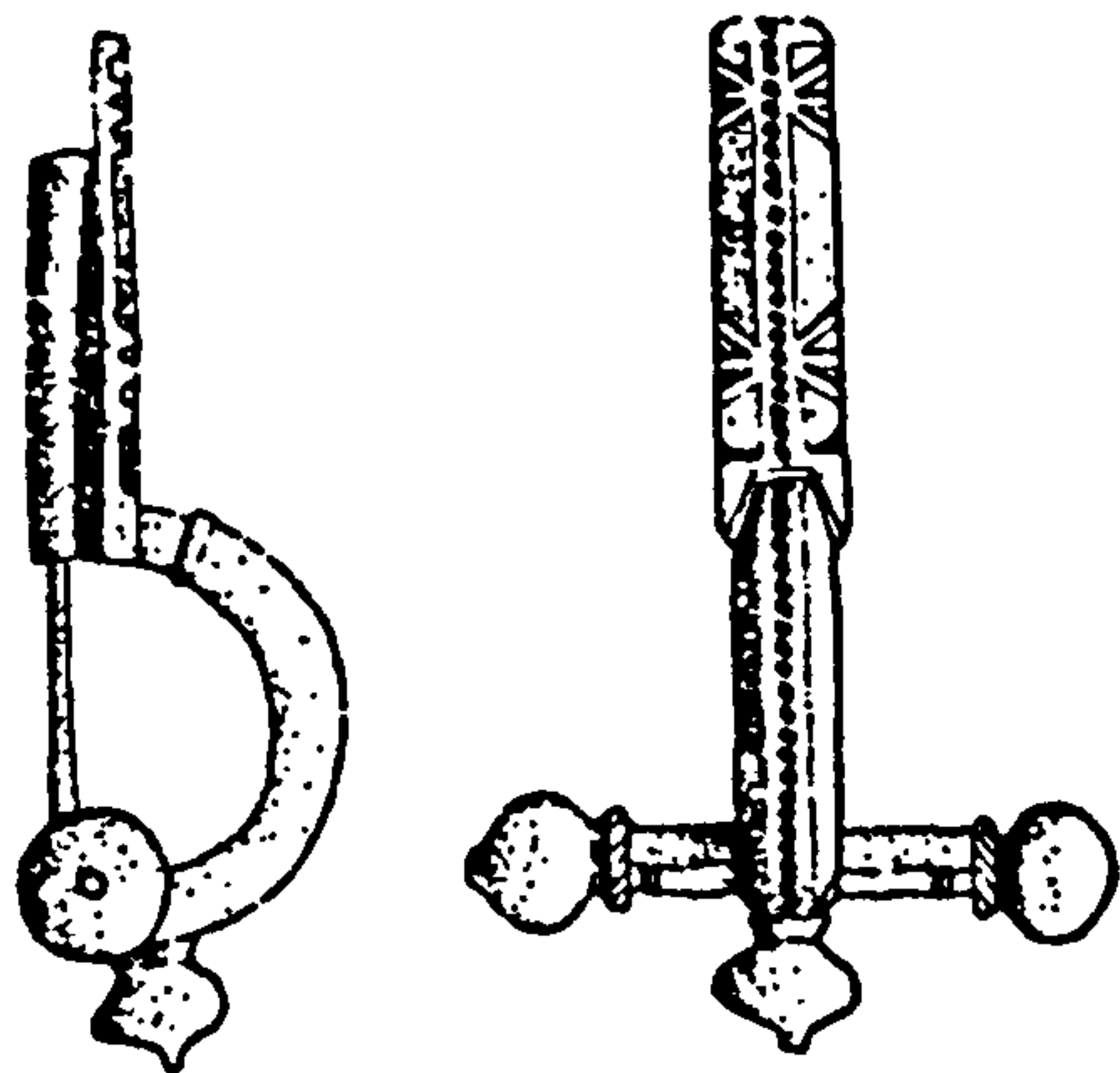


Oudenburg  
Mertens & Van Impe 1971 gr.37

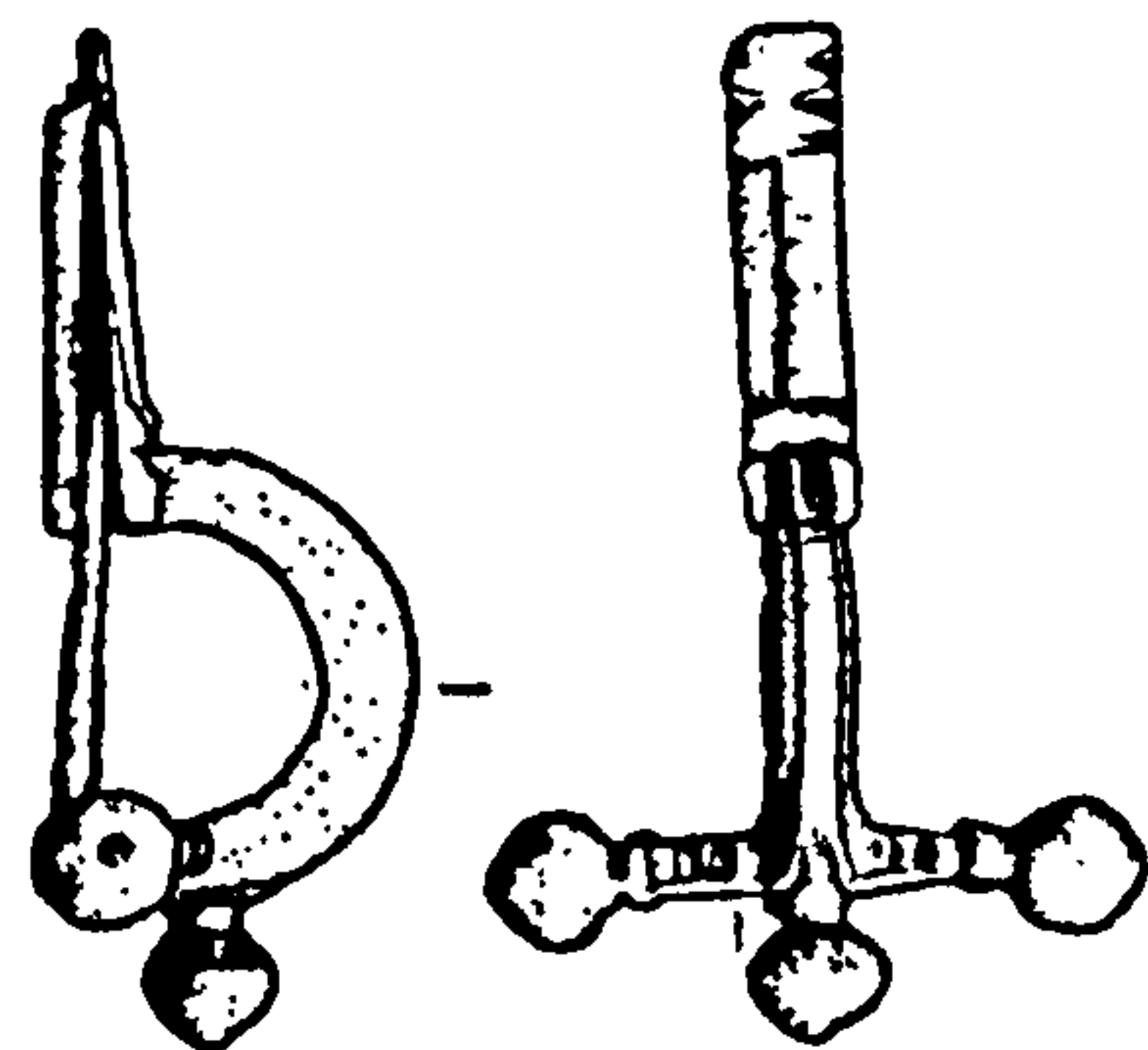
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Type 3/4a (above)  
Type 3/4b (below)

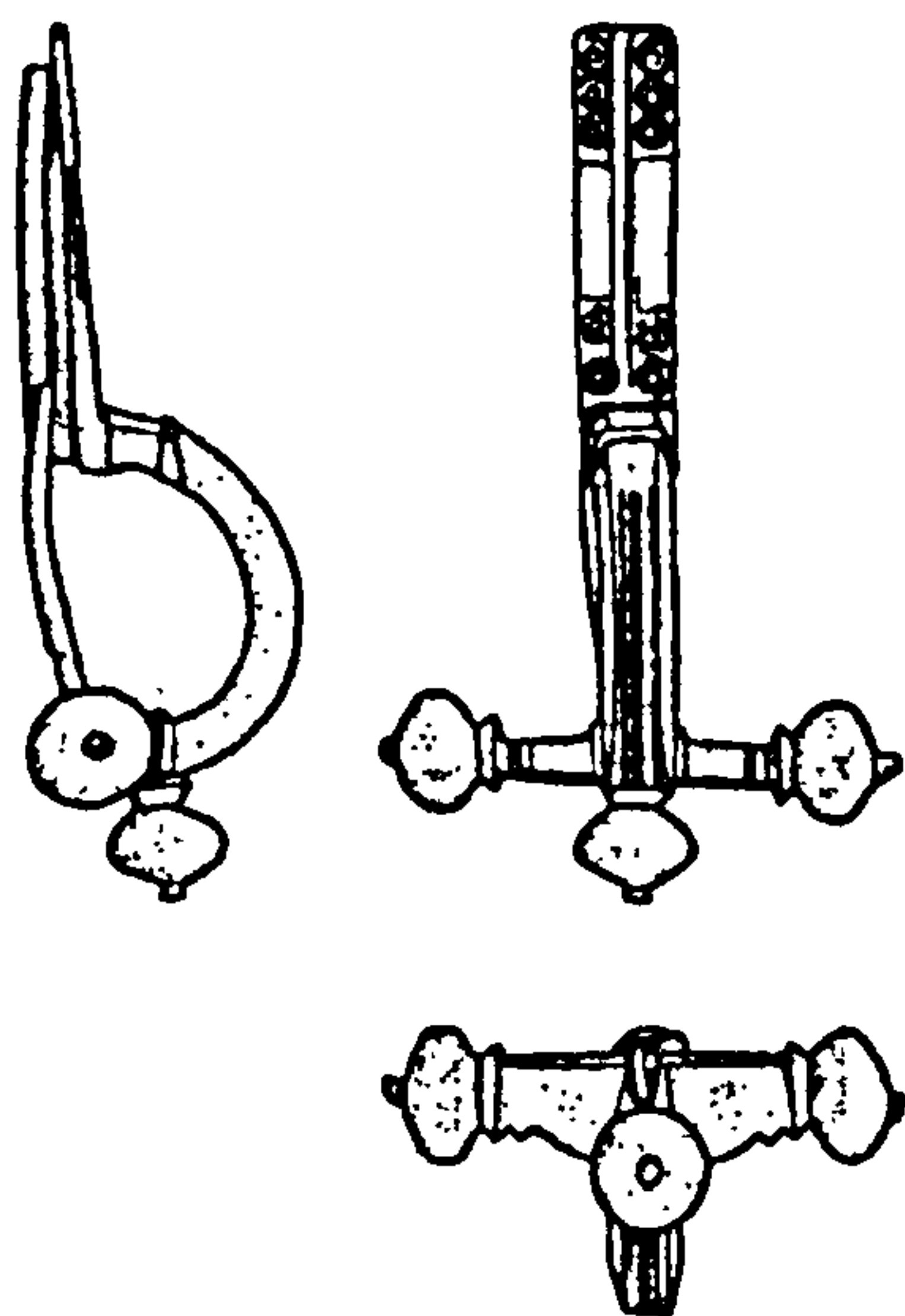


Günzburg  
Keller 1971 taf.12 5



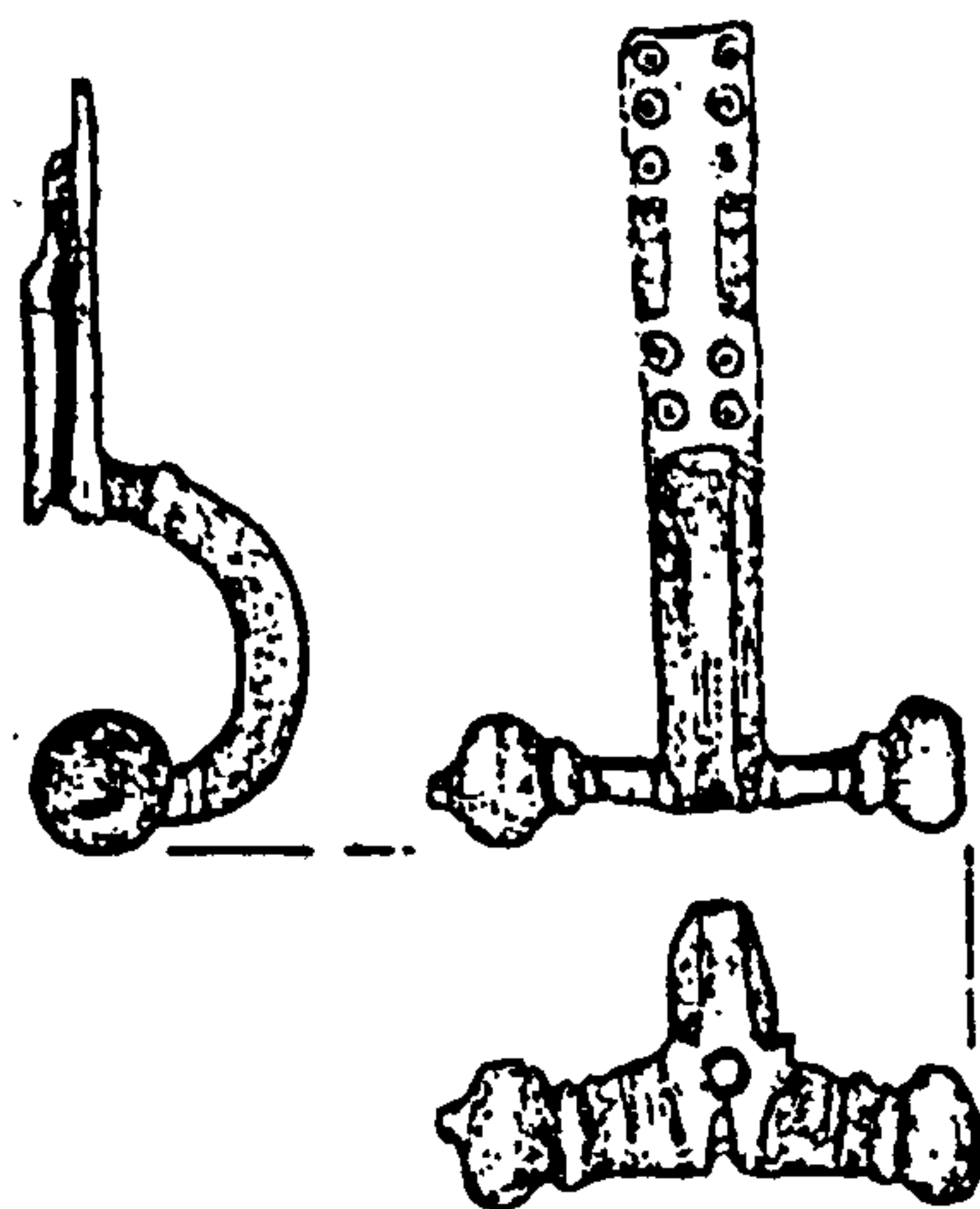
Föching  
Keller 1971 taf.21 1

11  
σ



Neuberg an der Donau  
Keller 1979 taf.4 8

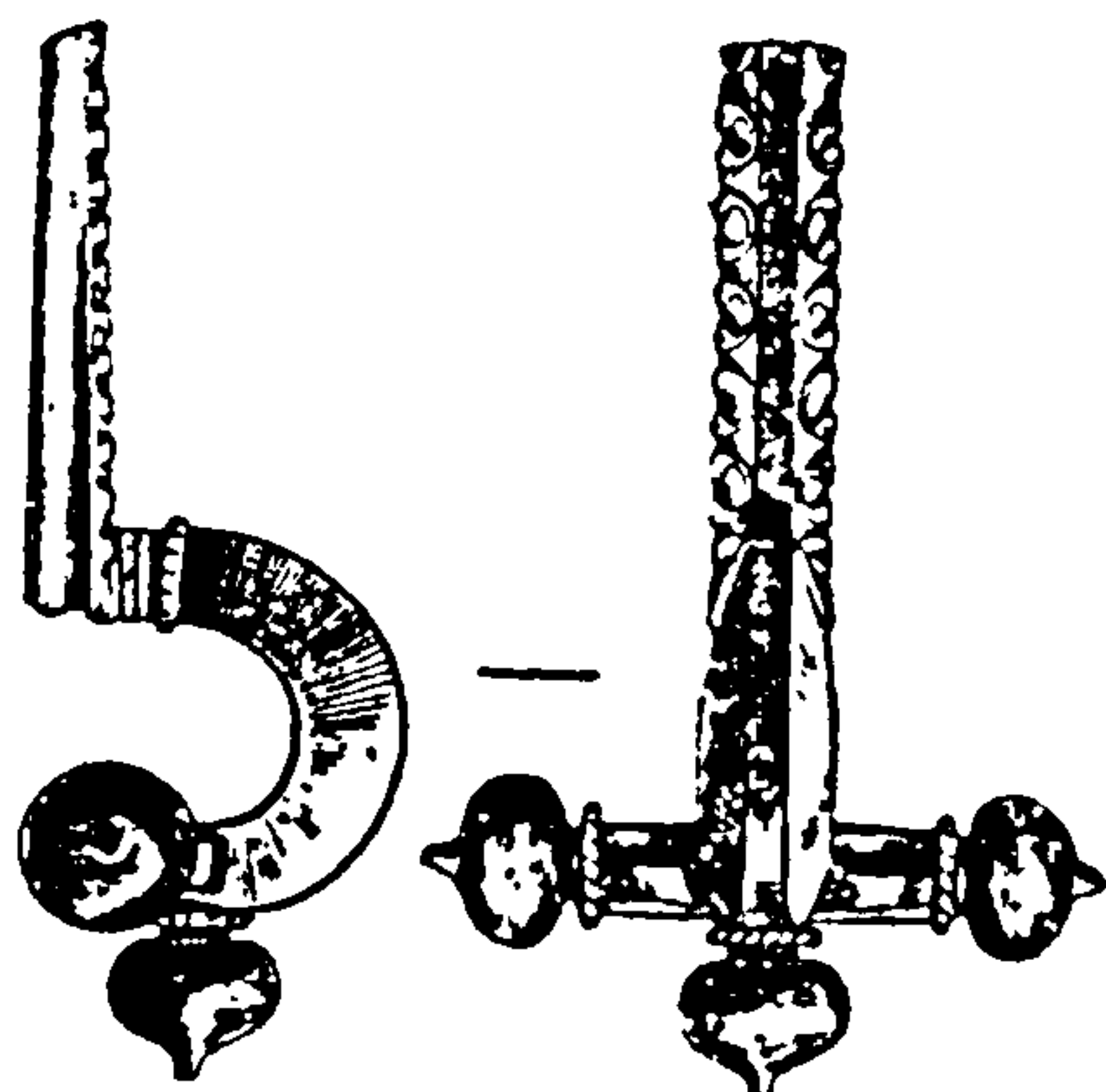
12



Münchhof  
Adler ed.1980 abb.468

at varying scales

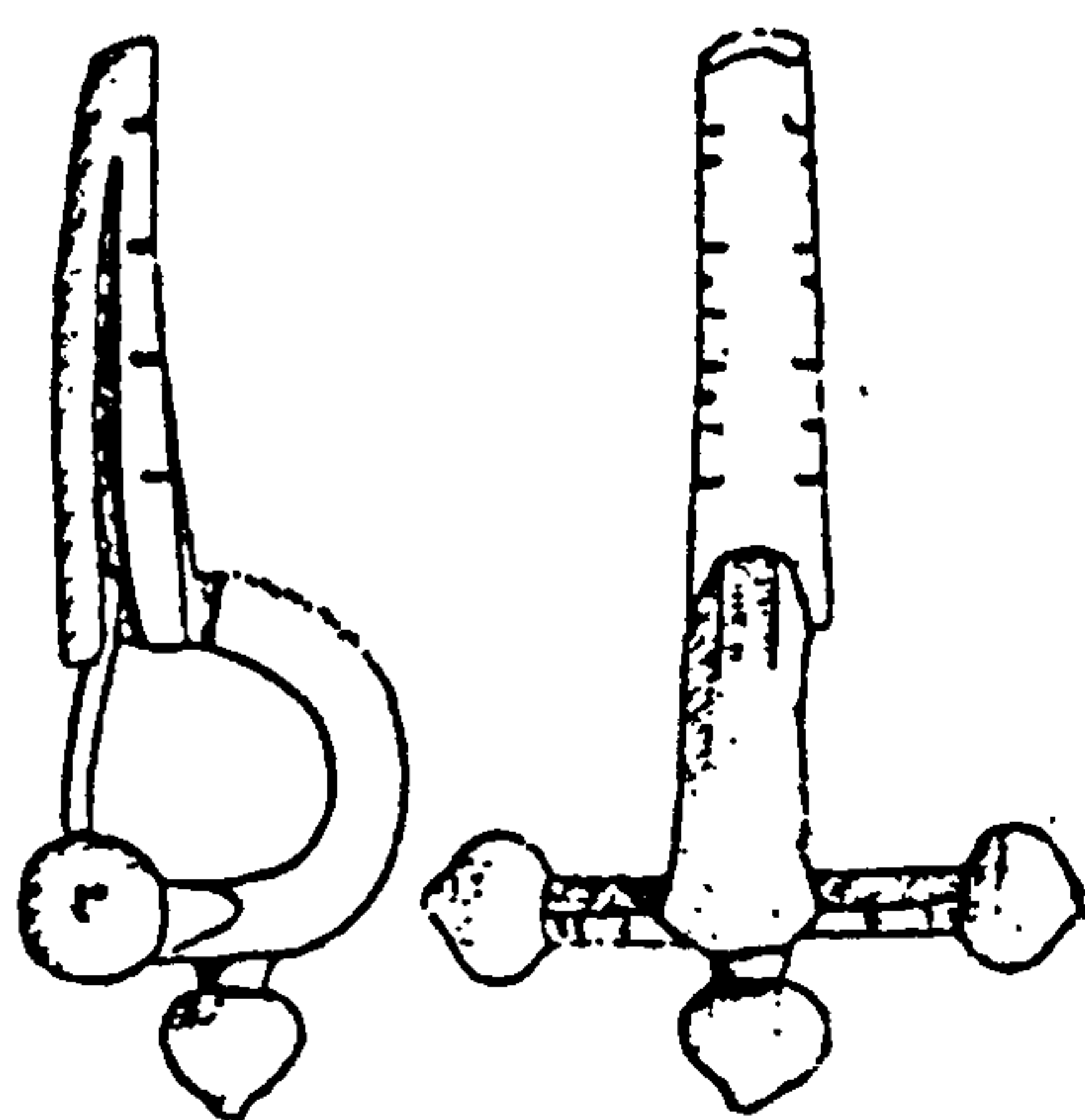
Type 3/4c (above)  
Type 3/4d (below)



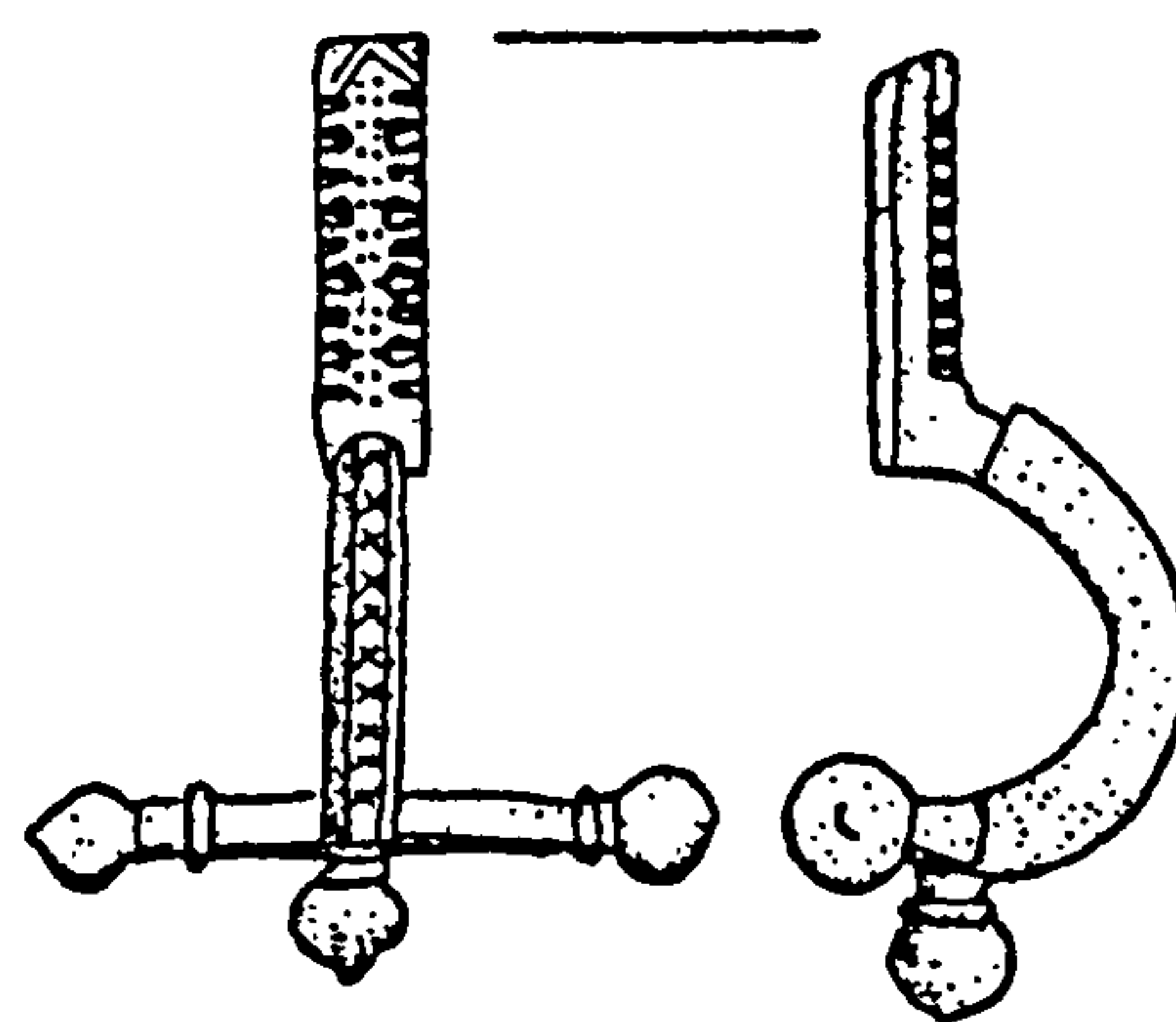
Colchester  
Brailsford 1951 fig.10 30



Augst  
Riha 1979 taf.55 1486



Krefeld-Gellep  
Pirling 1966 taf.93 10

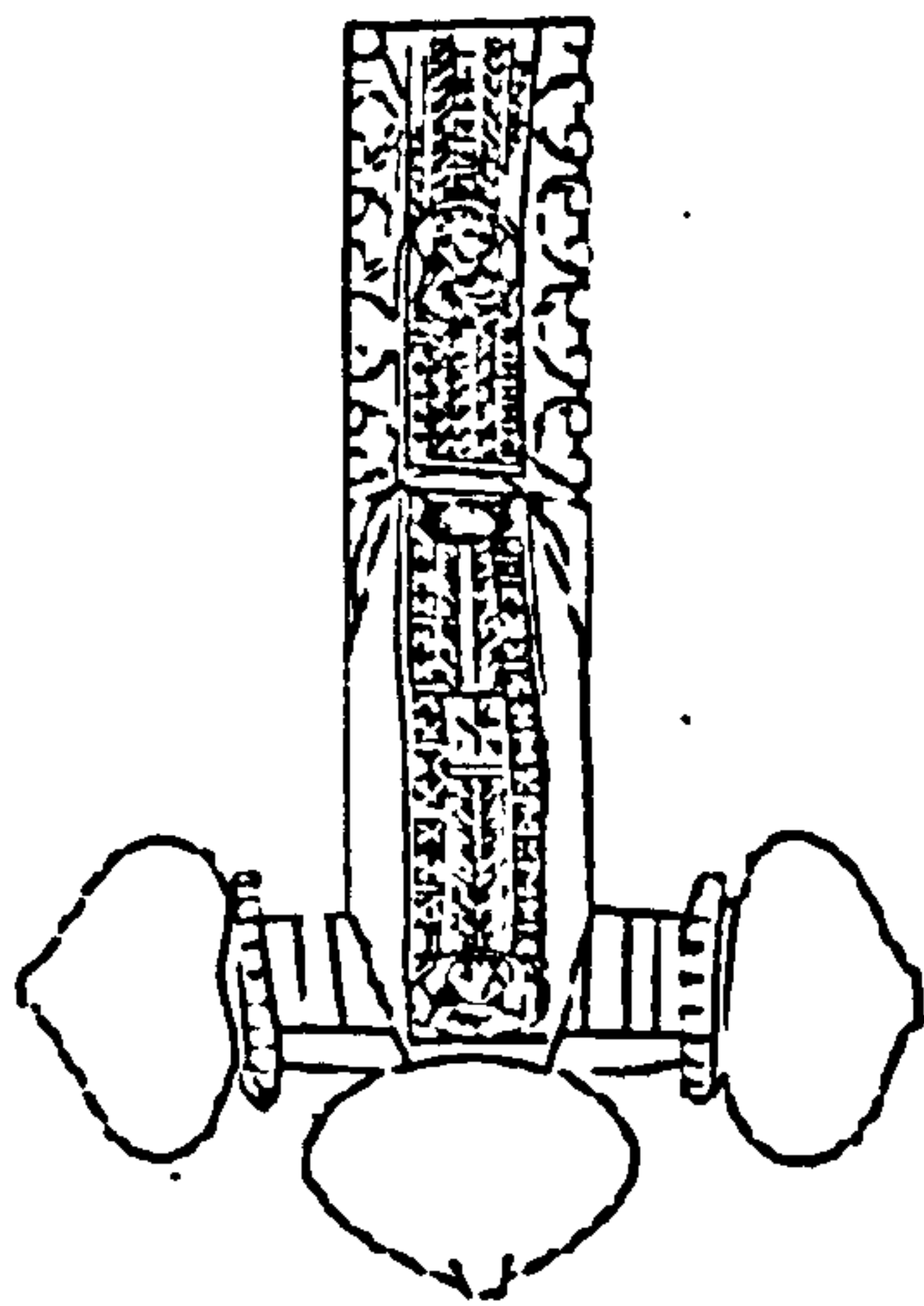


Balzers  
Overbeck 1982 taf.36 6

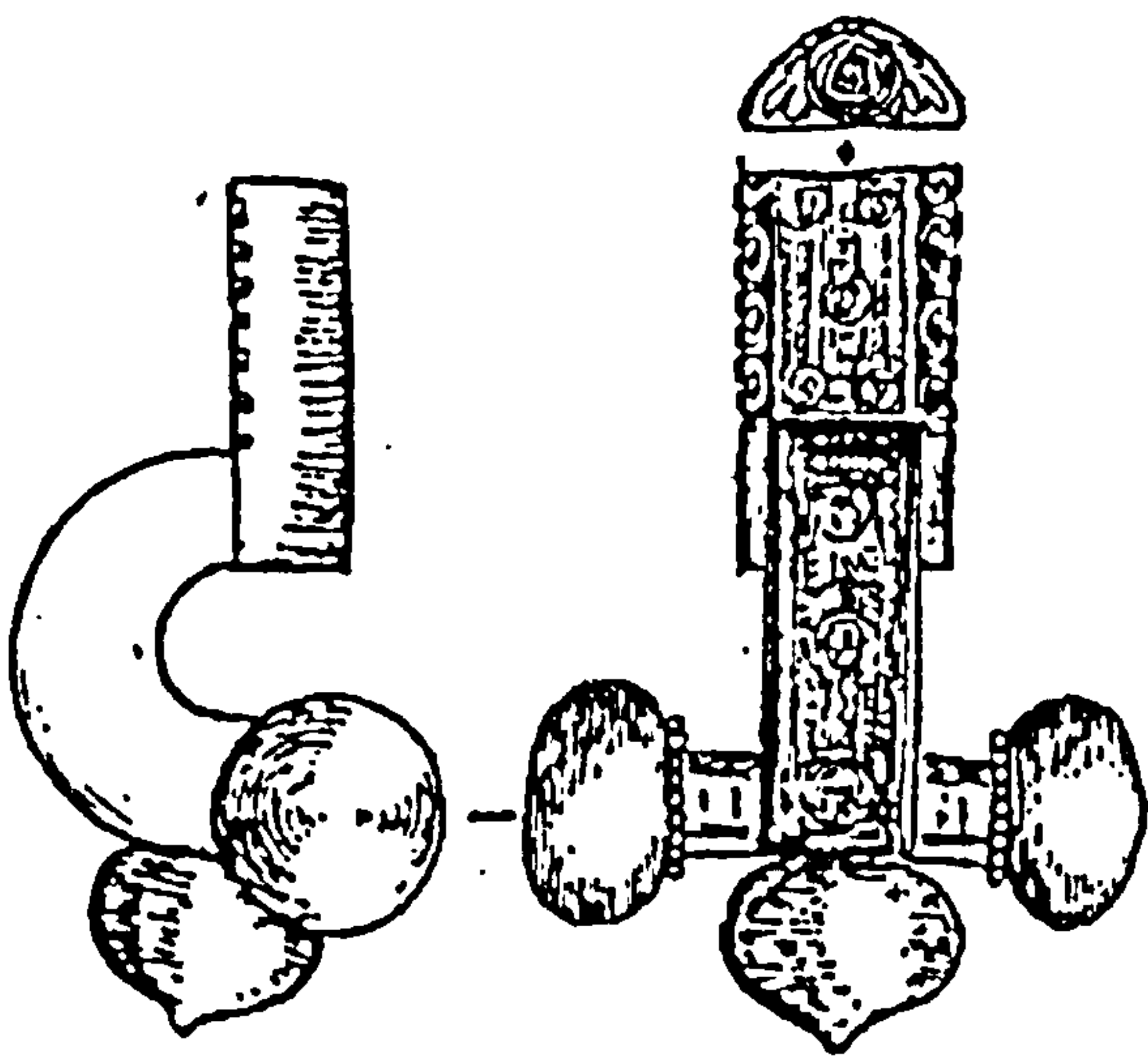
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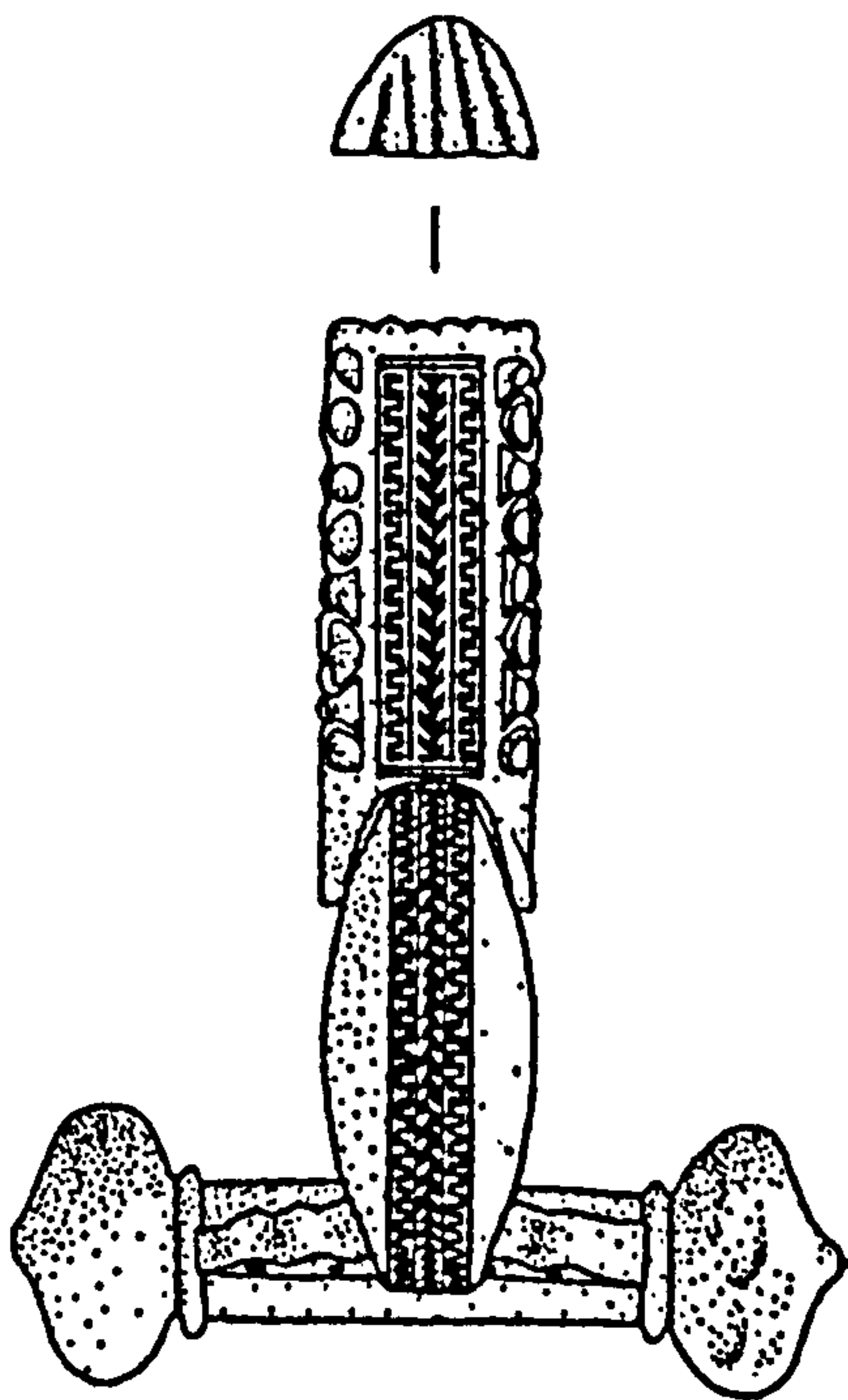
Type 5i



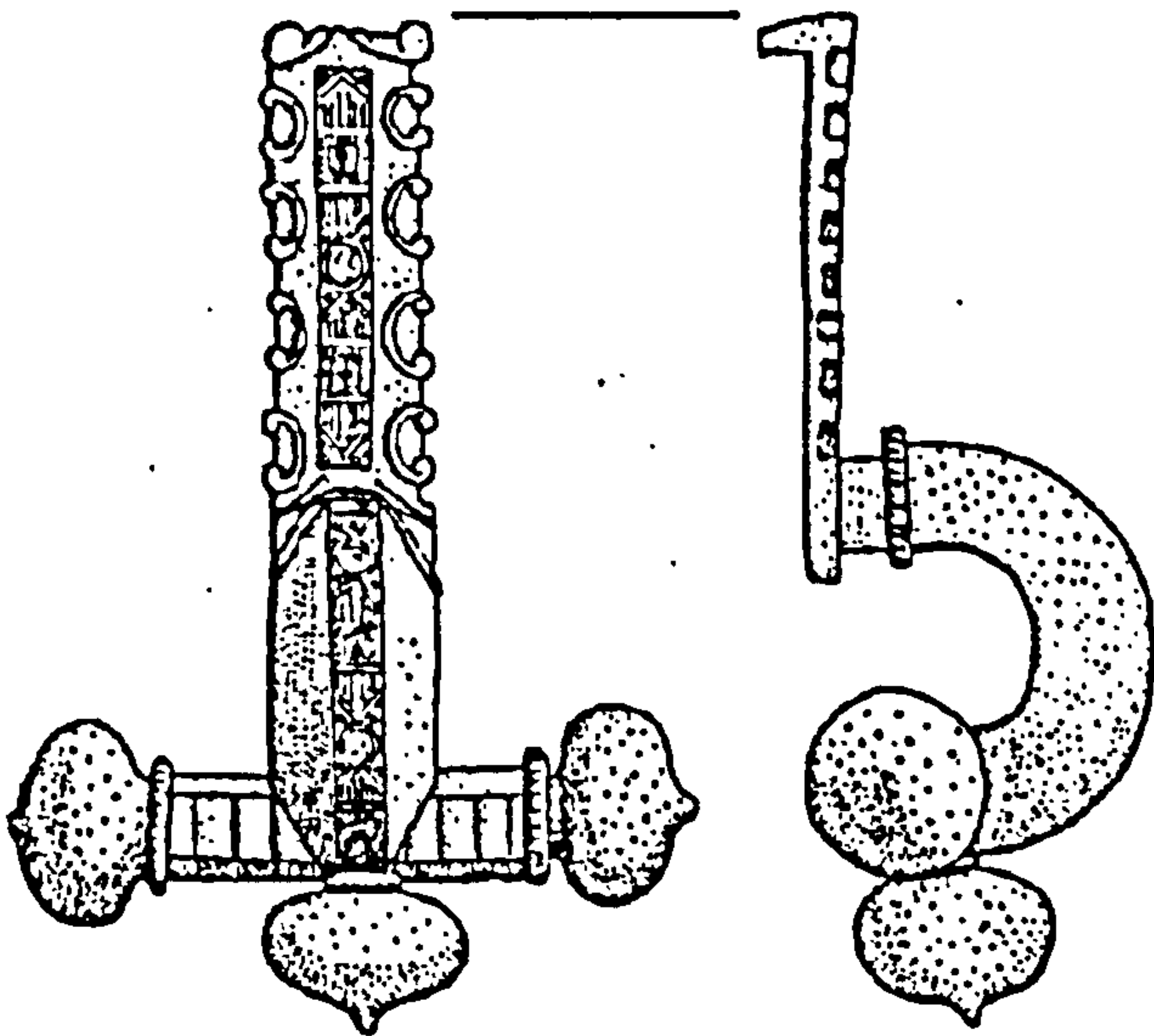
Basel  
Laur-Belart 1959 abb.41



Sagvar  
Burger 1966 gr.114



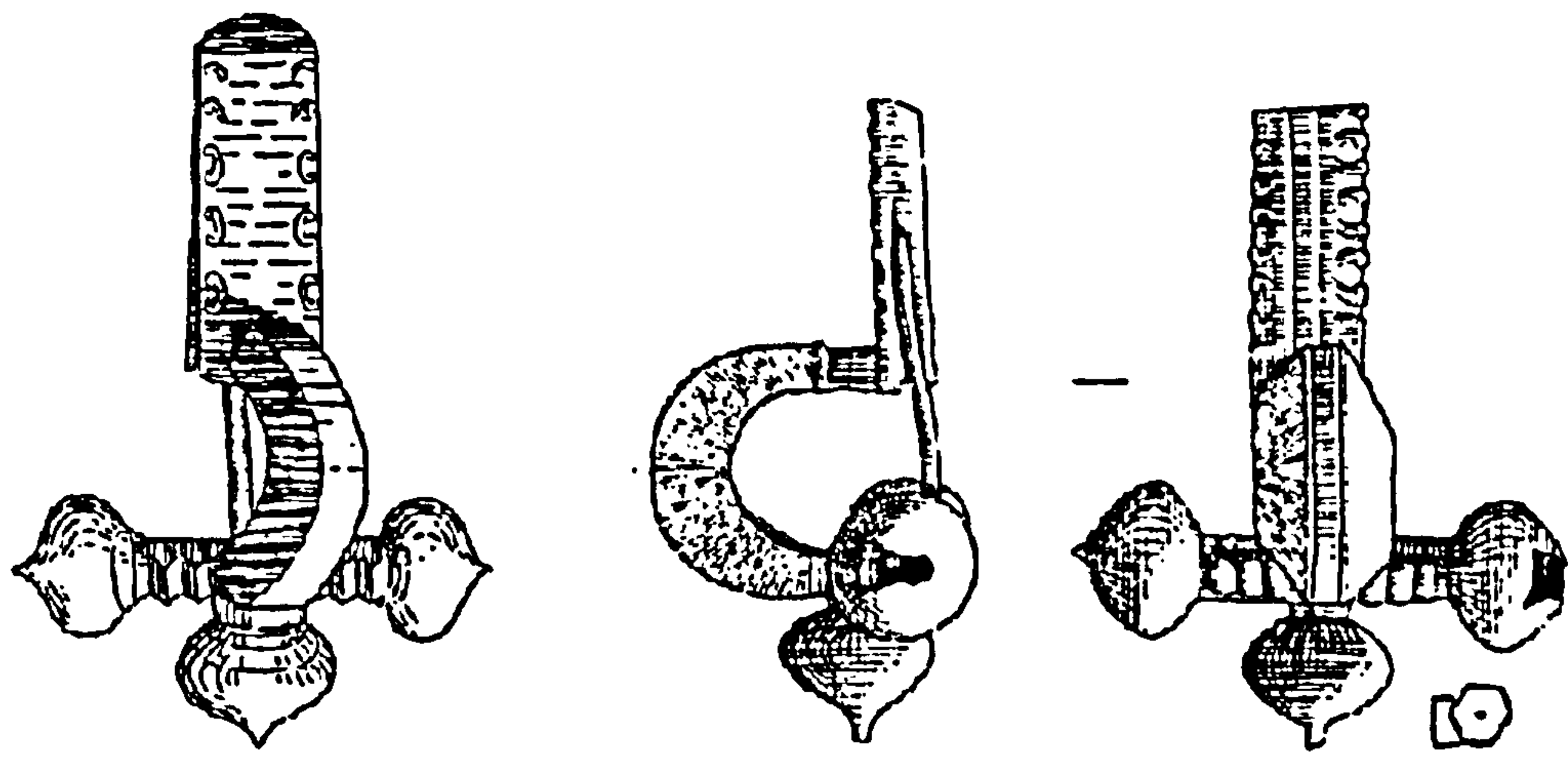
Chartres  
Maison d'archéologie, Chartres  
s.738 c.77 7180.1



Bregenz  
Overbeck 1982 167

at varying scales

Type 5ii



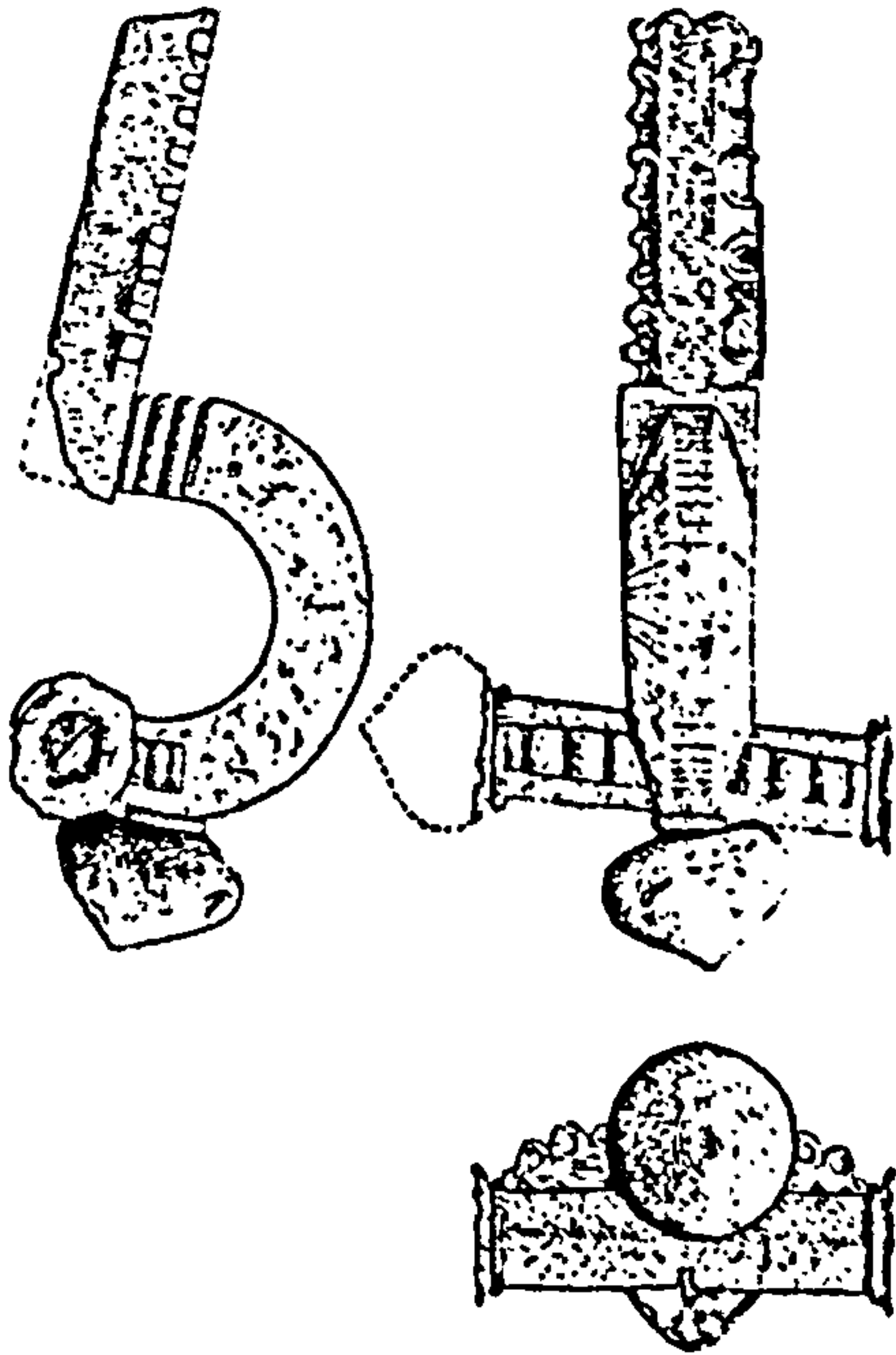
Abbeville  
Böhme 1974 taf.112

Lankhills  
Clarke 1979 SF.278

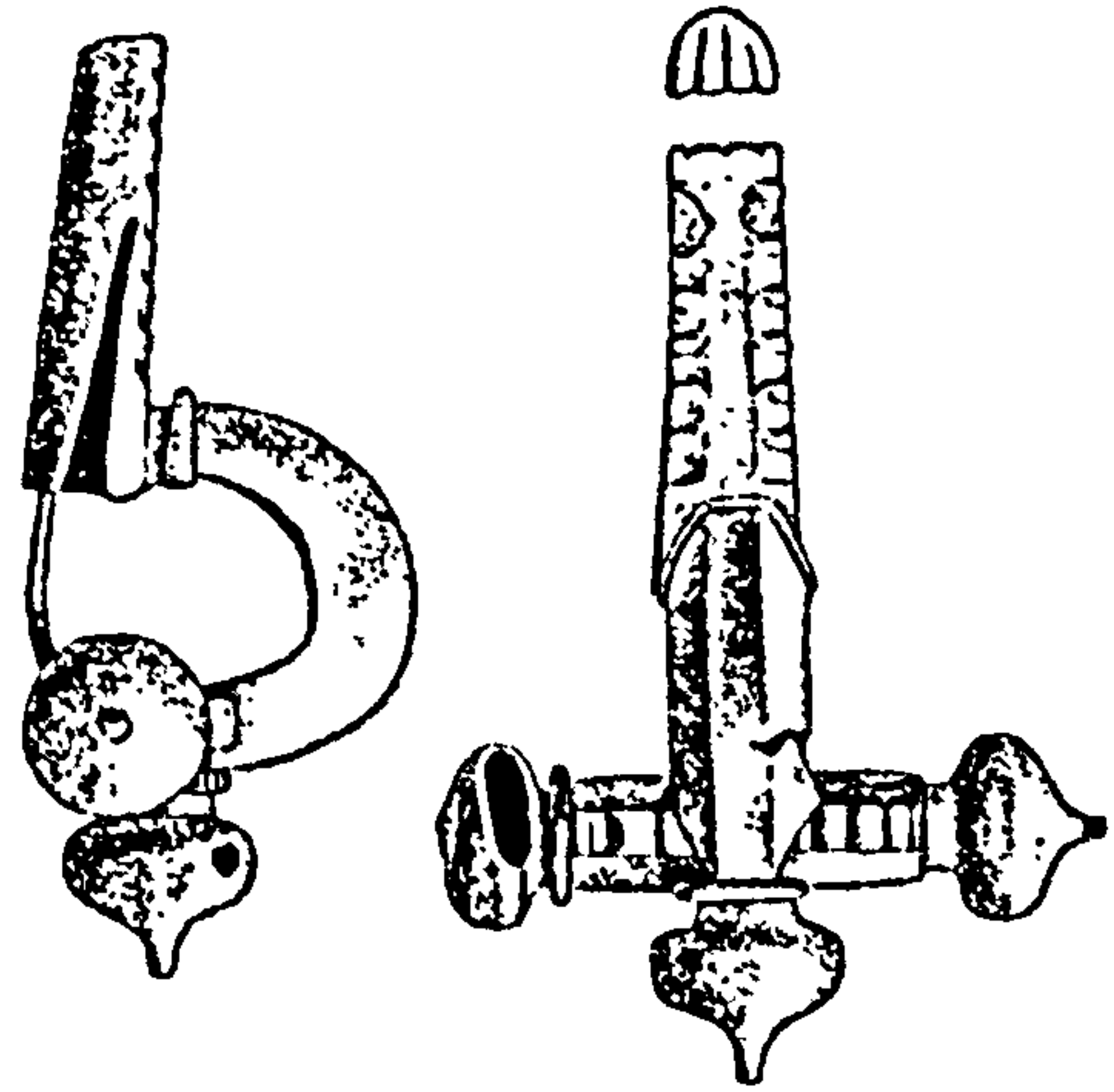
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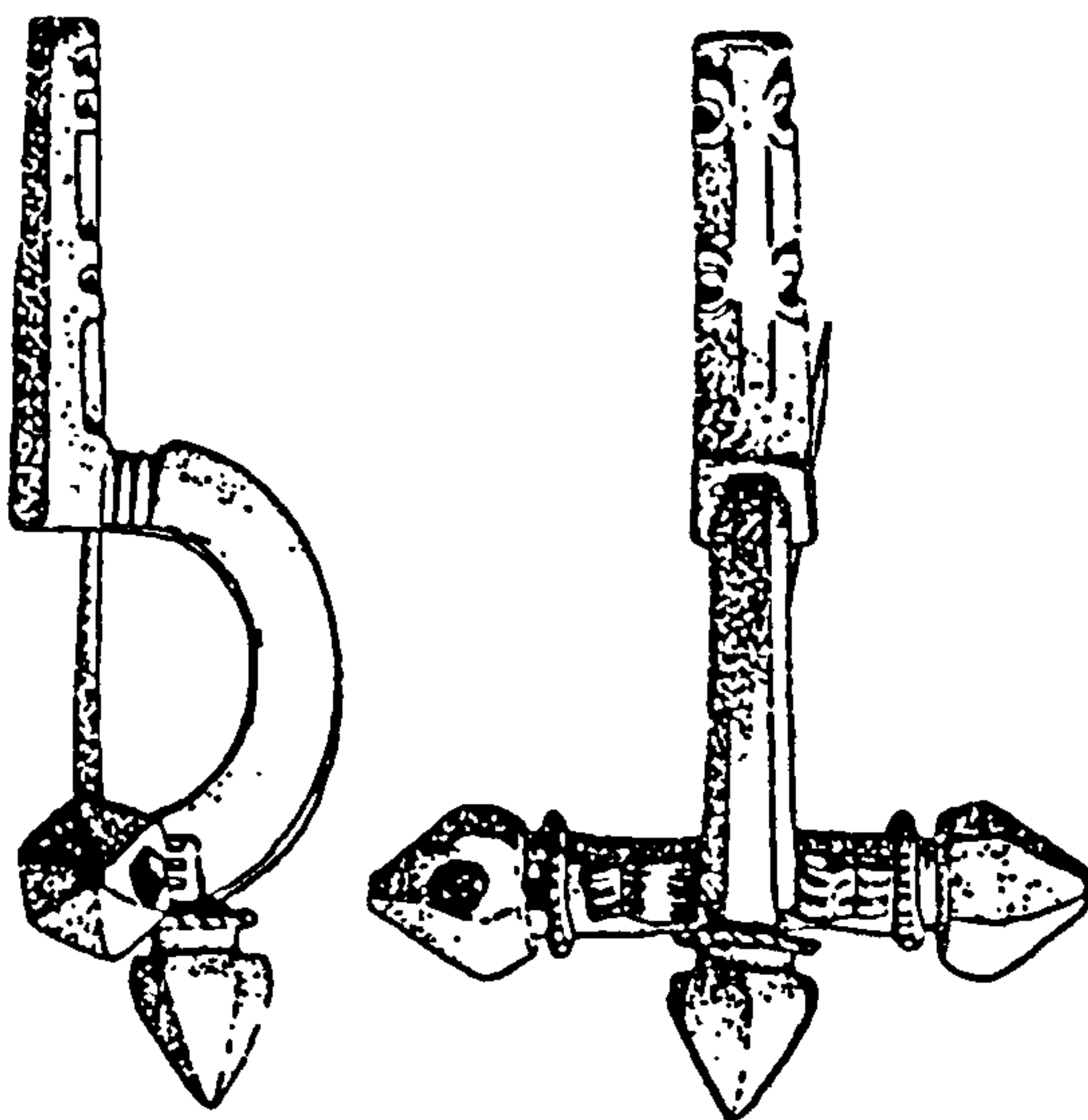
Type 6i



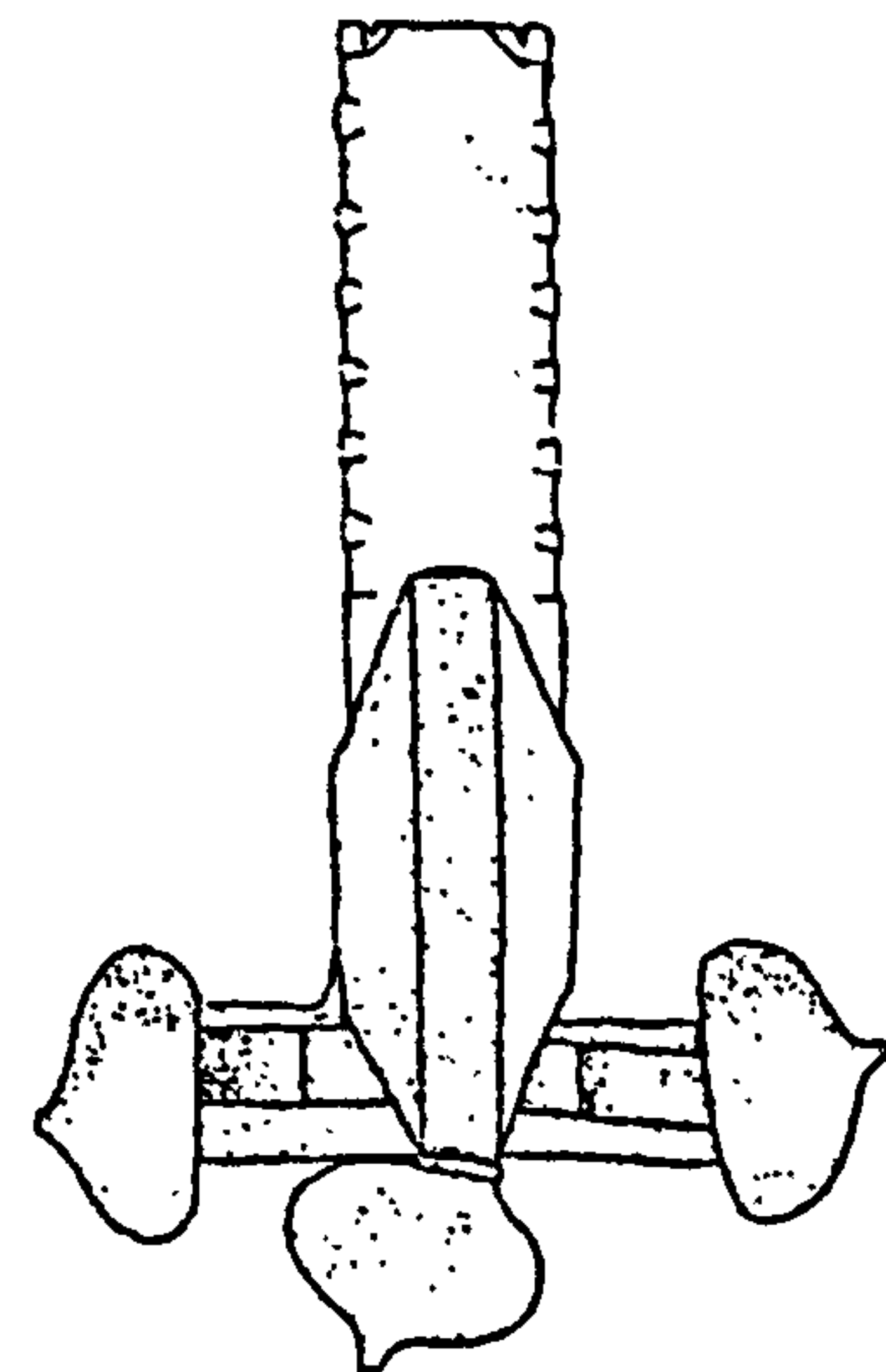
Bury St. Edmunds  
Hattatt 1987 fig.93 1269



Augst  
Riha 1979 taf.56 1493



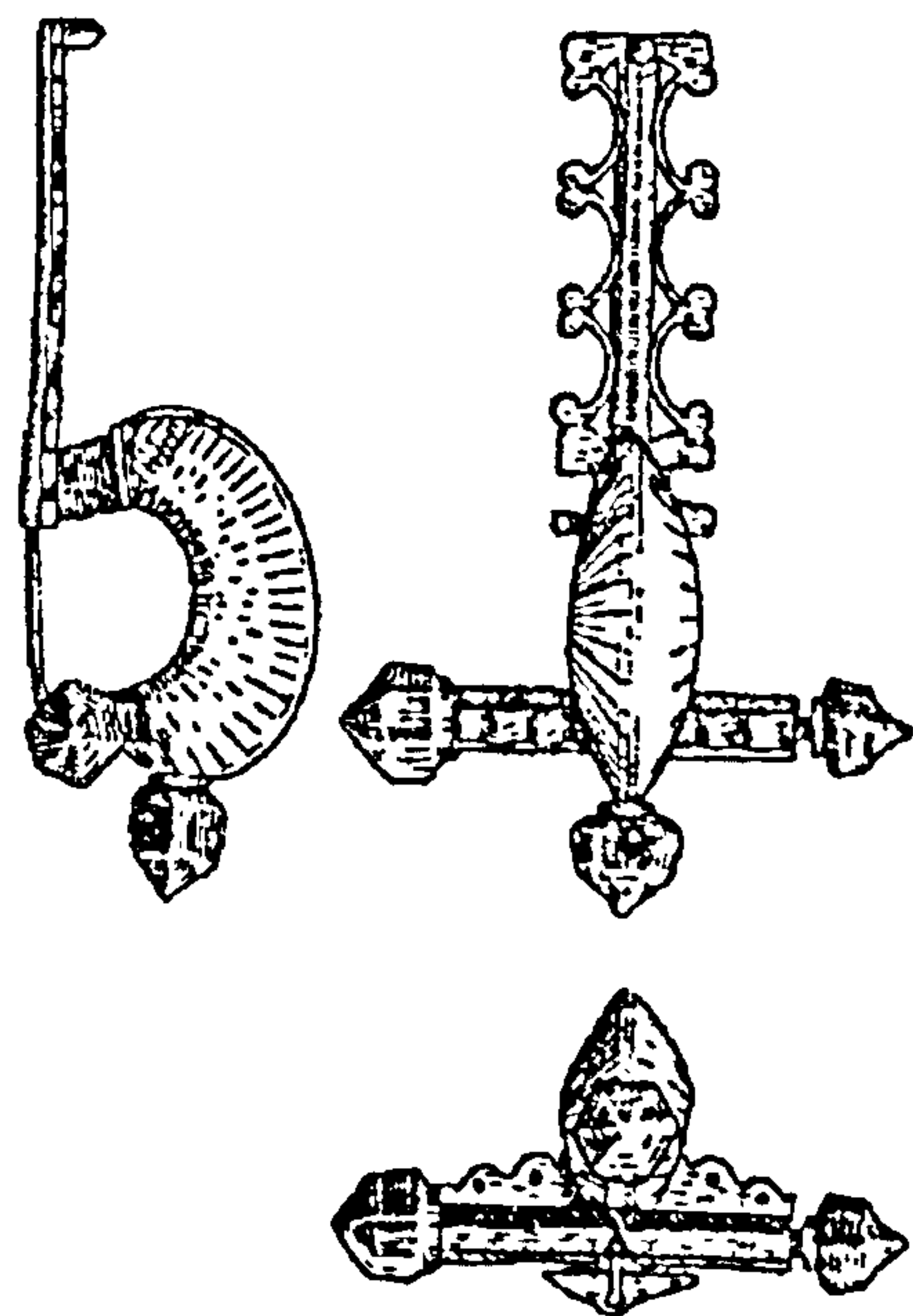
Augst  
Riha 1979 1485



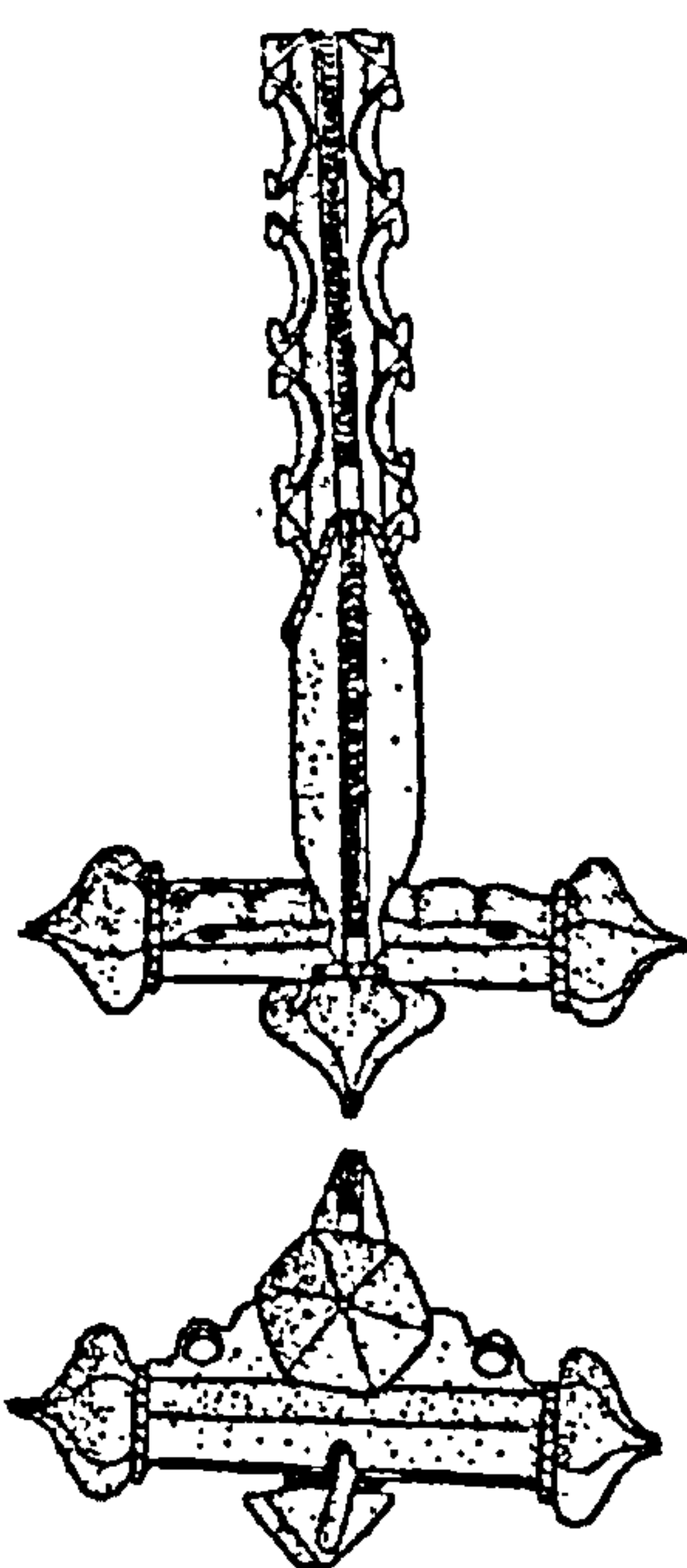
Meaux  
Landaïs & Giraud 1984 p.199

at varying scales

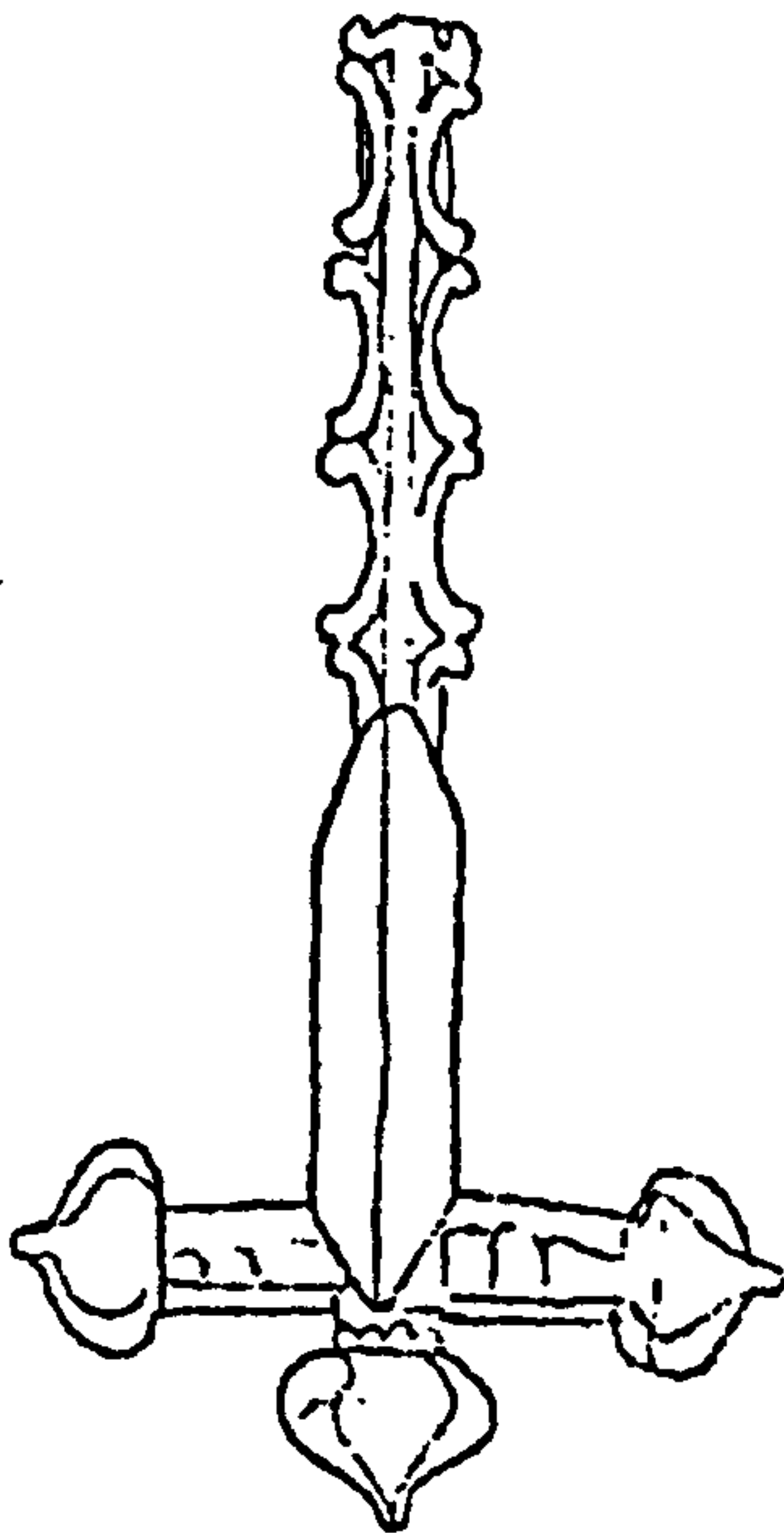
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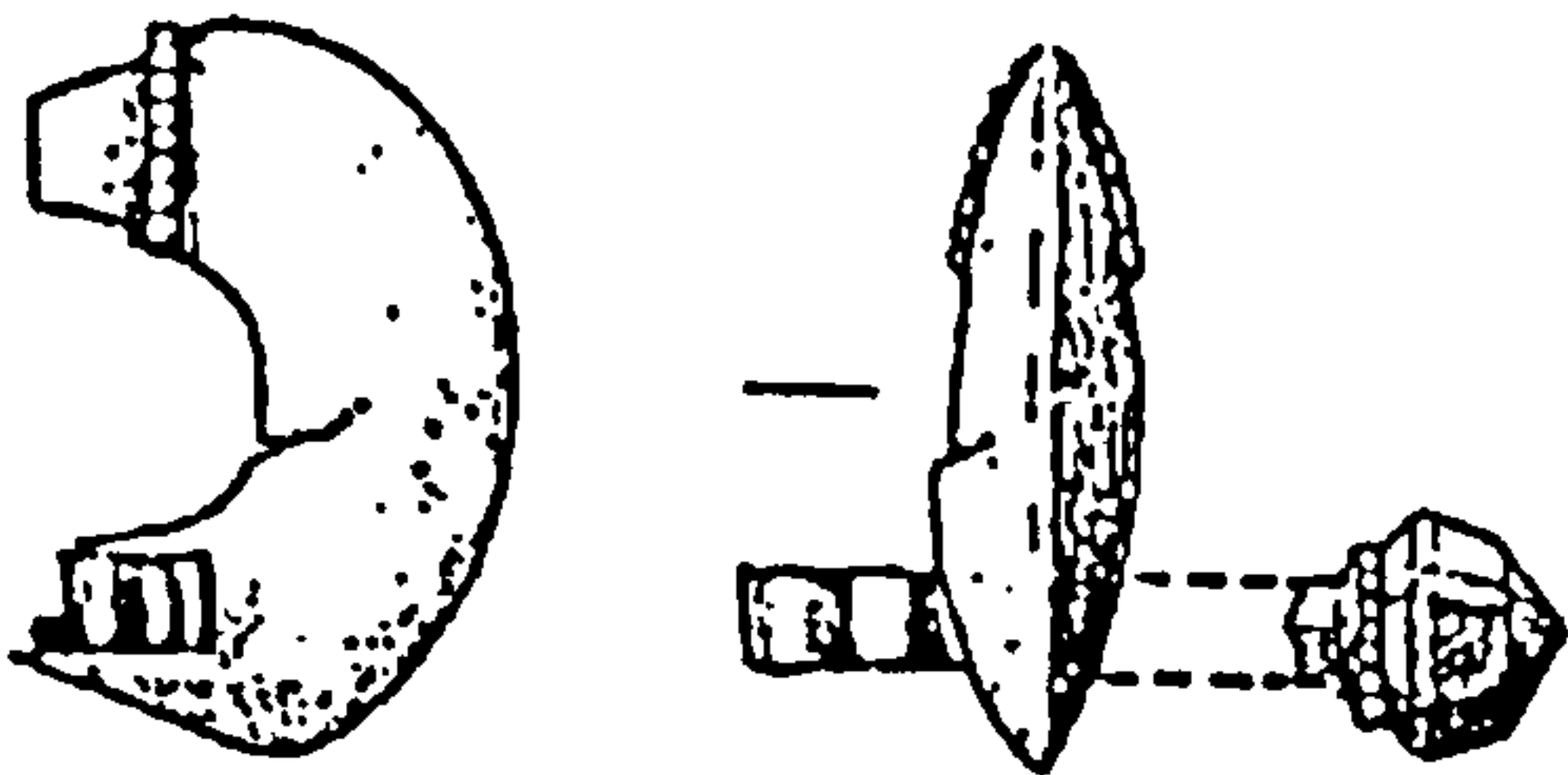
Icklingham  
Hattatt 1985 fig.58 507



Chartres  
Chartres Maison d'Archéologie  
s.625 c77.6362.1



Tokod  
Mócsy 1981 gr.48



Maastricht  
Sectie Archeologie Gemeente  
Maastricht 1981MAVP 1-5-0 A

at varying scales



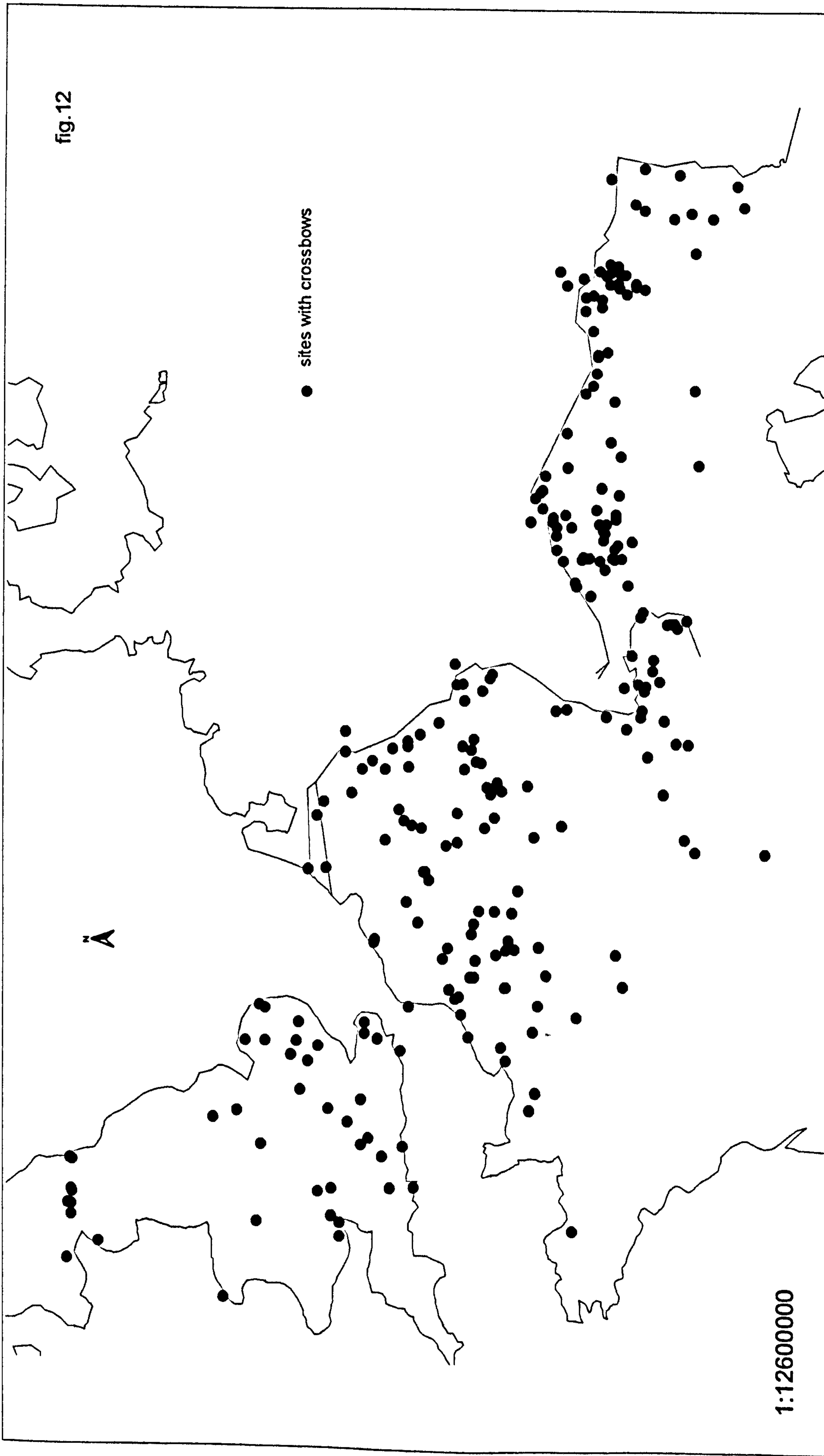


fig.12

1:12600000

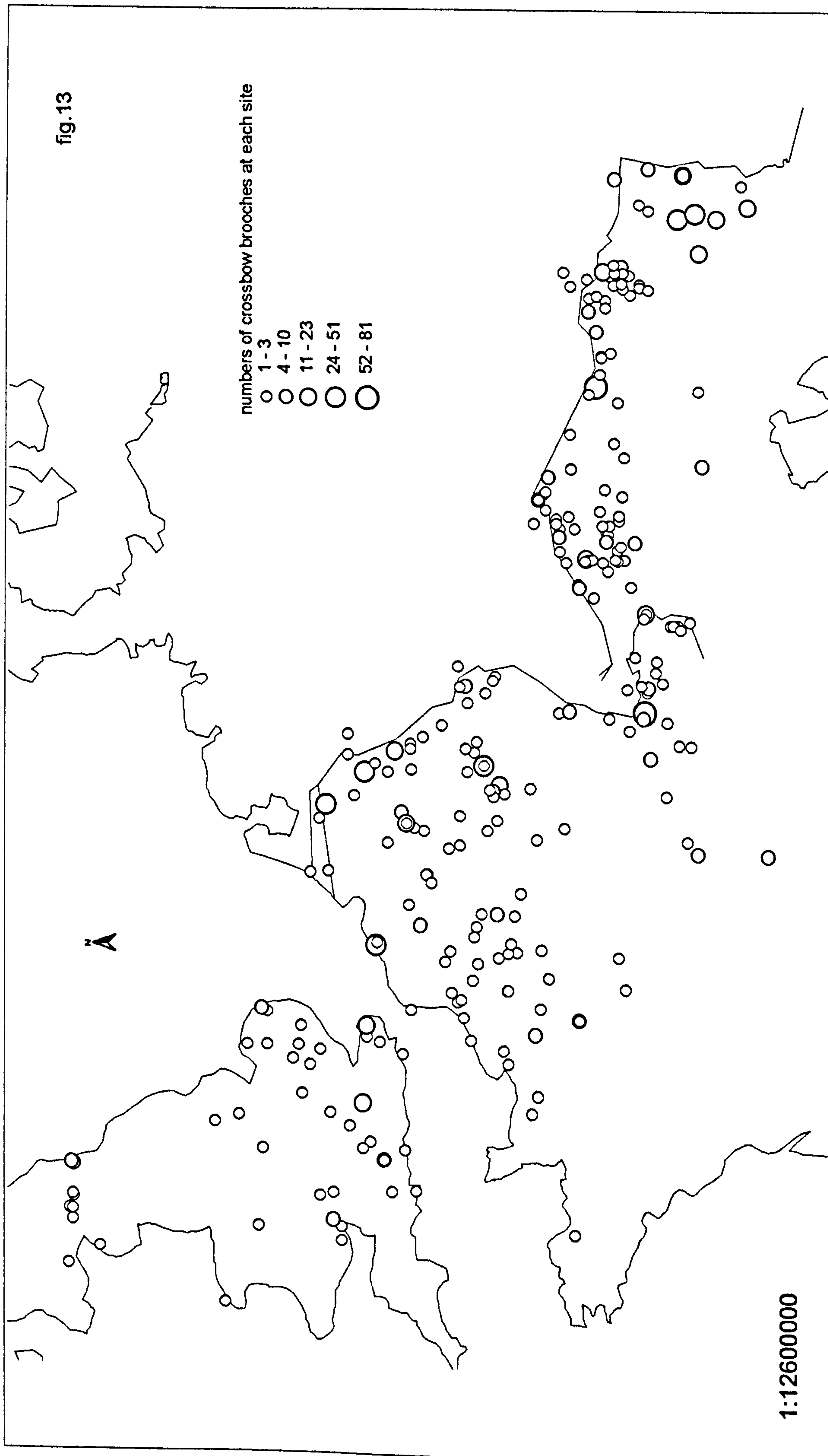


fig.13

1:12600000



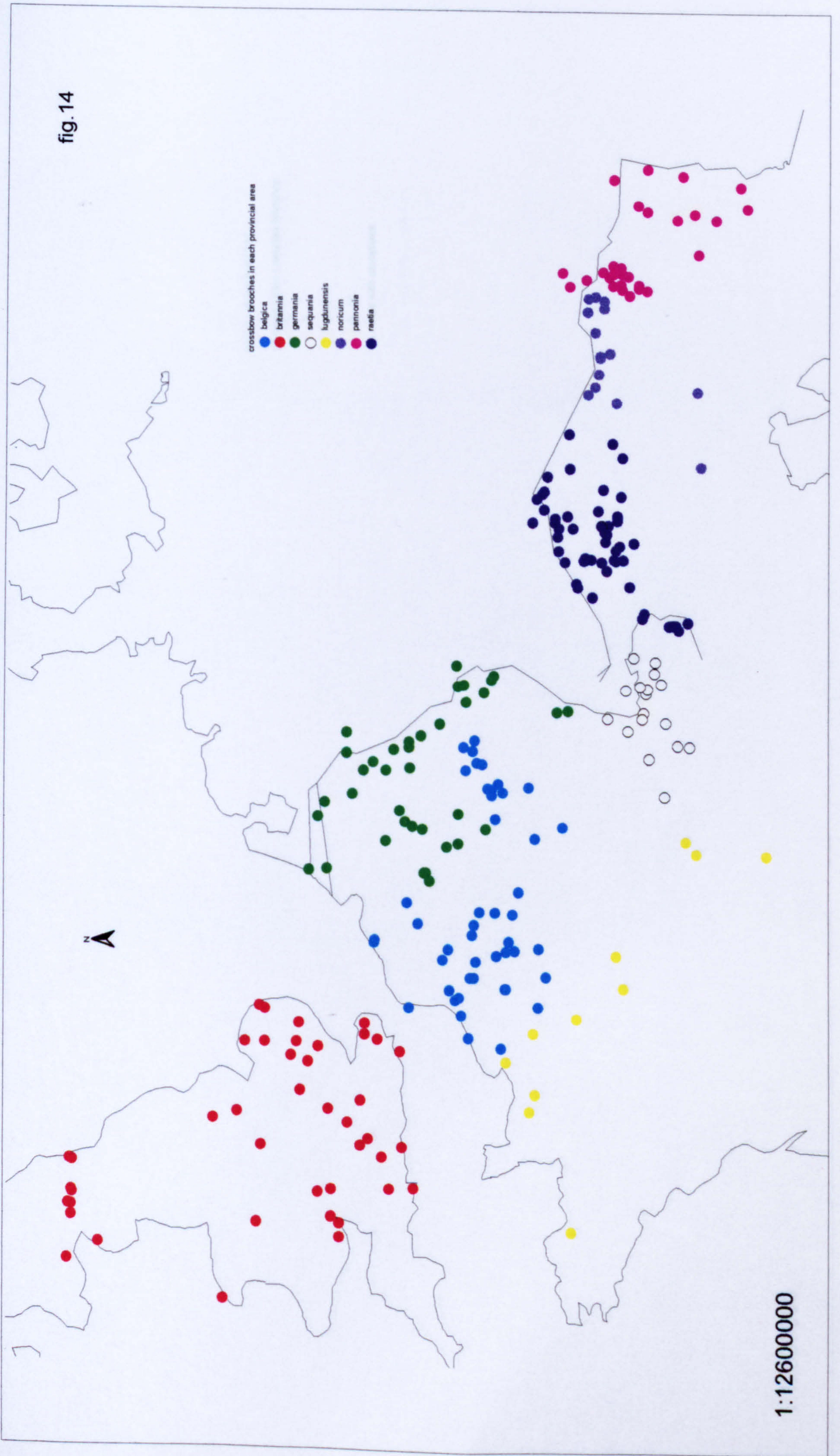


fig. 14



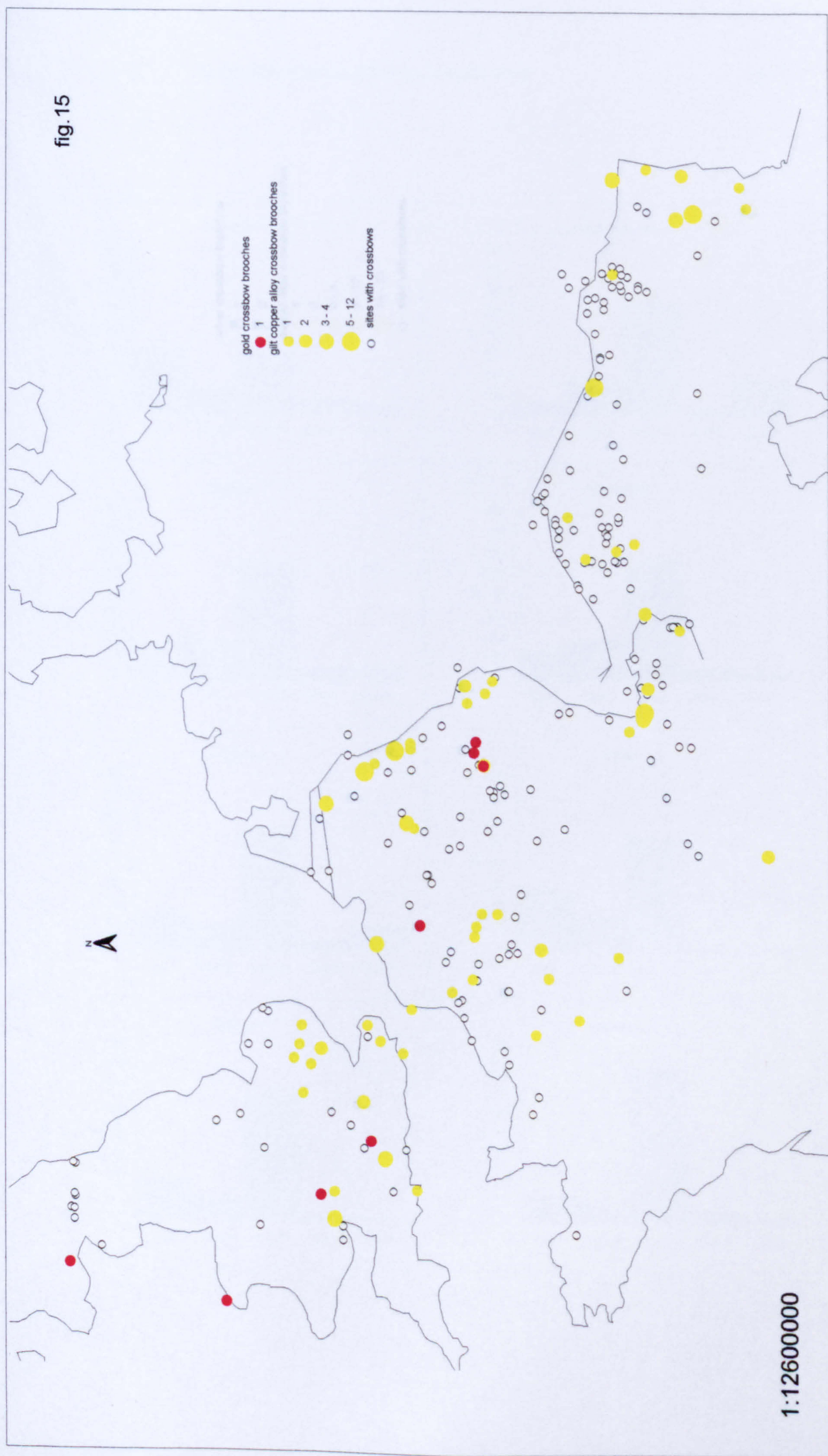


fig.15



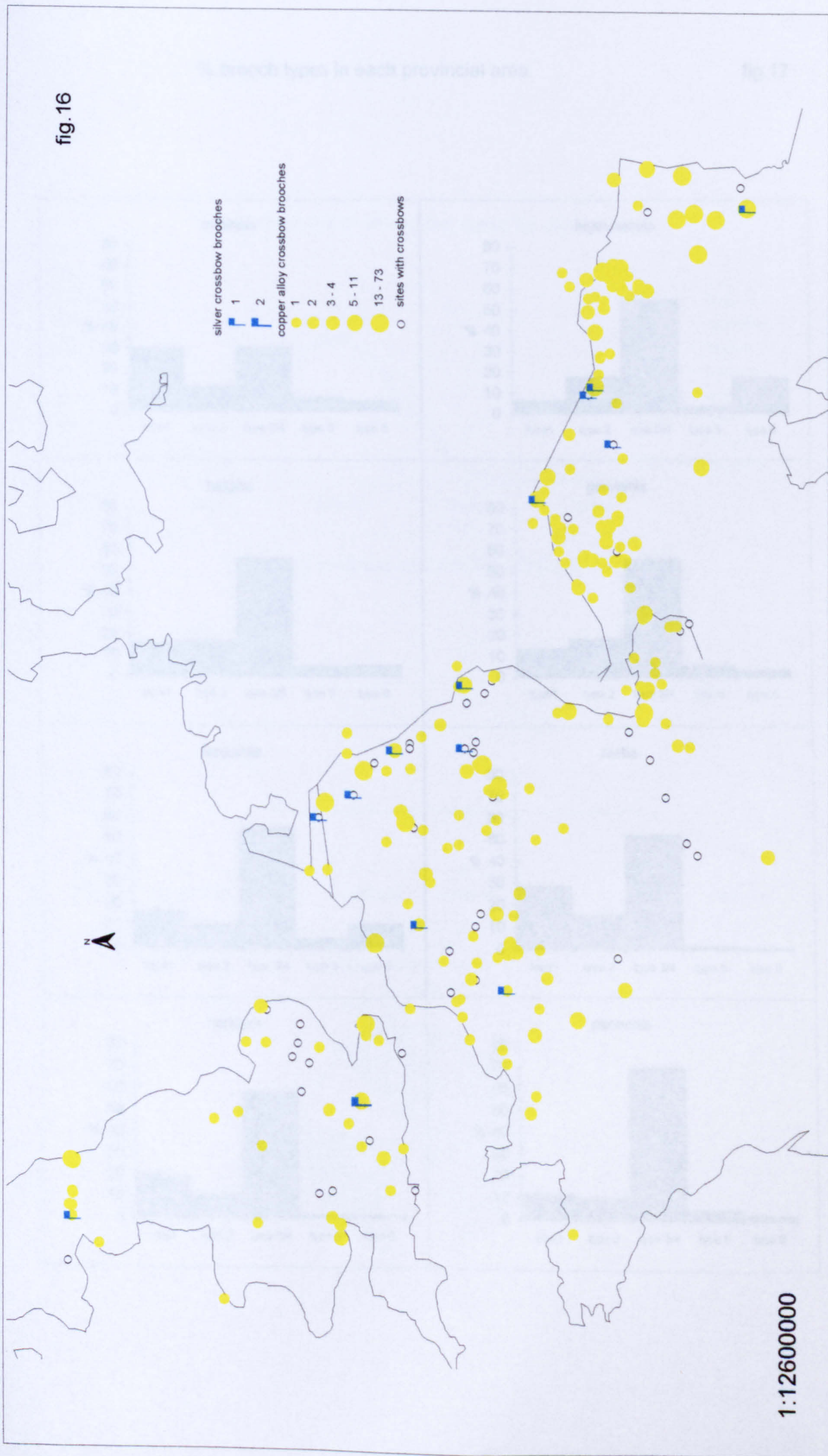
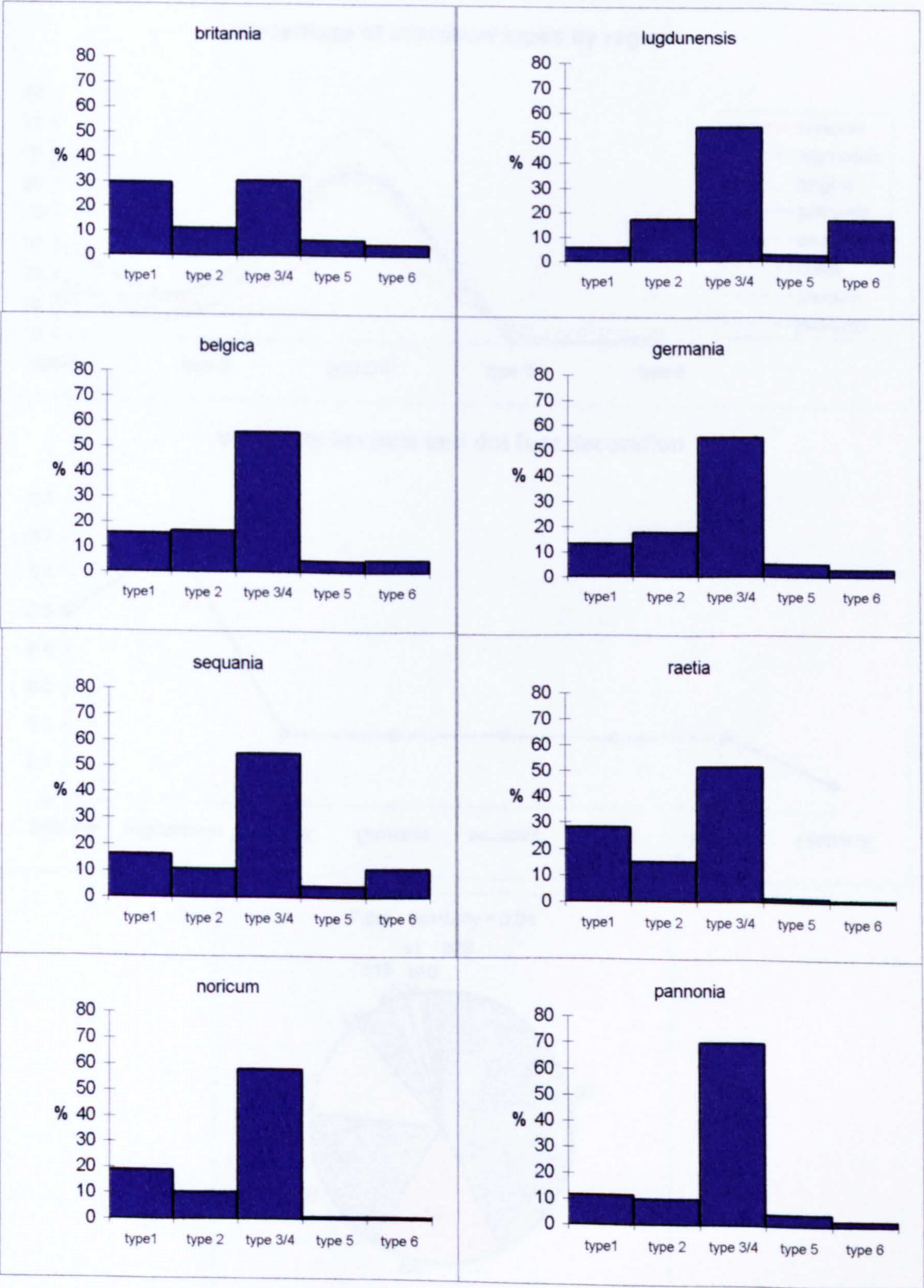


fig. 16



% brooch types in each provincial area

fig.17





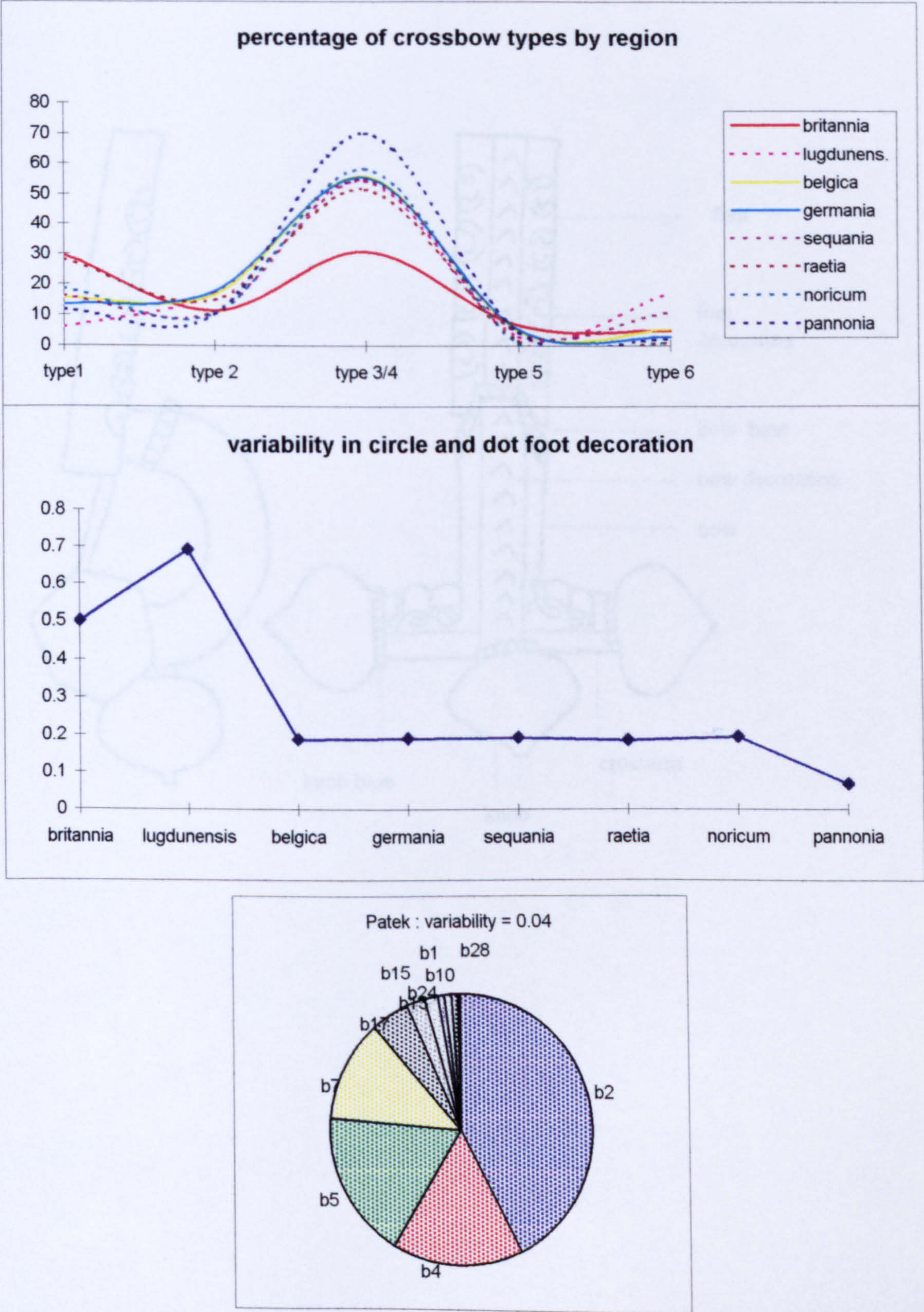
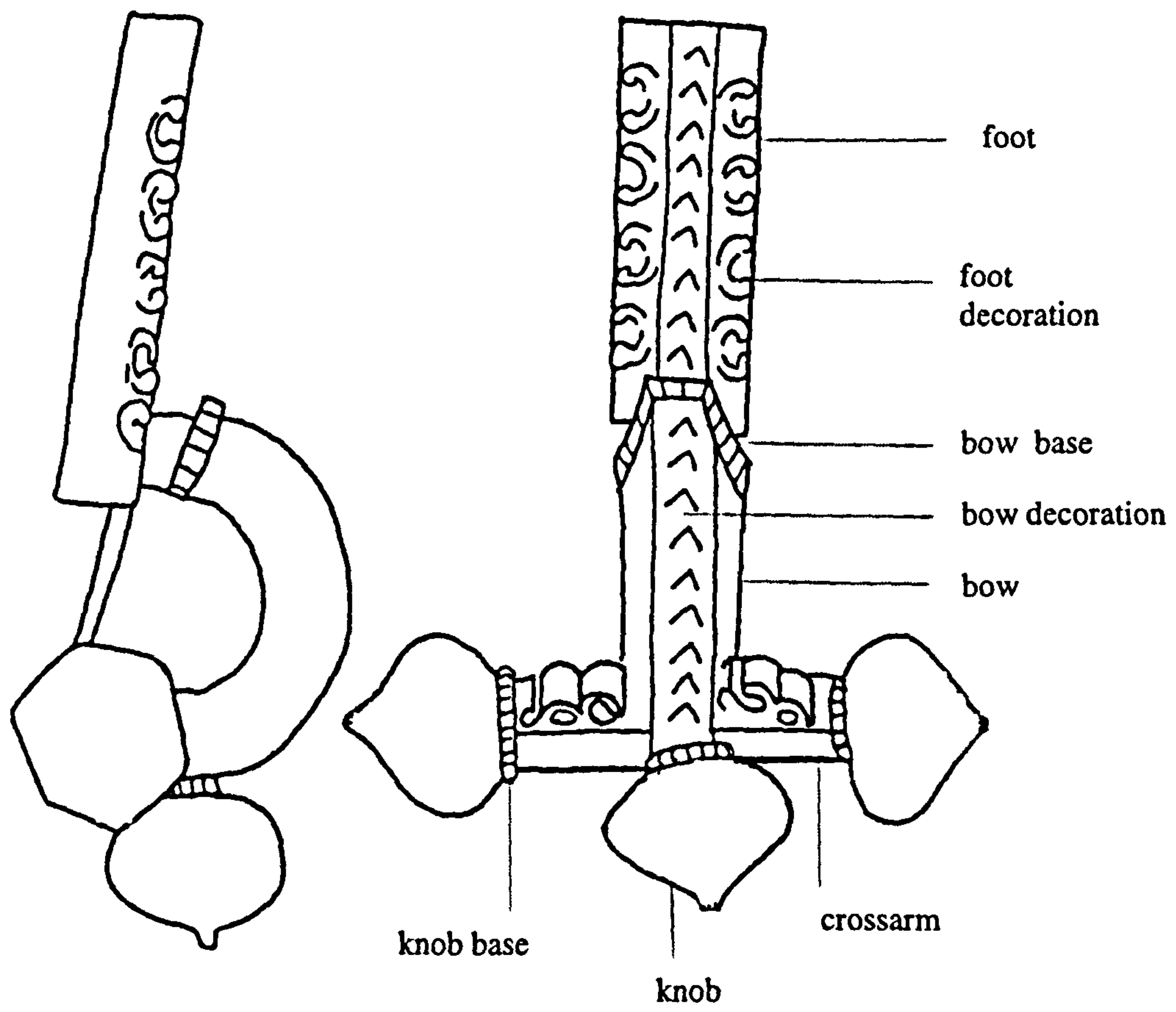




fig.19





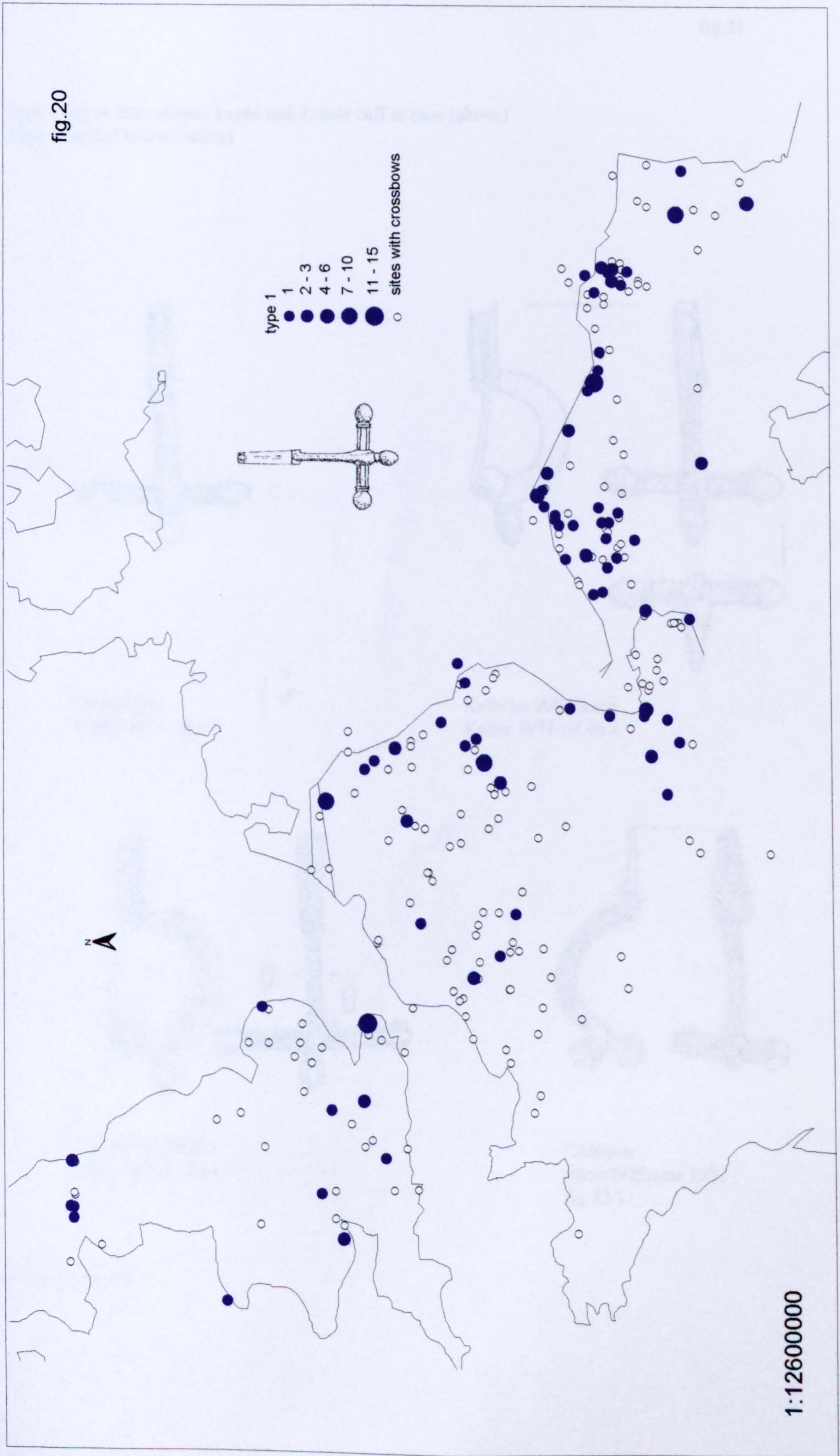
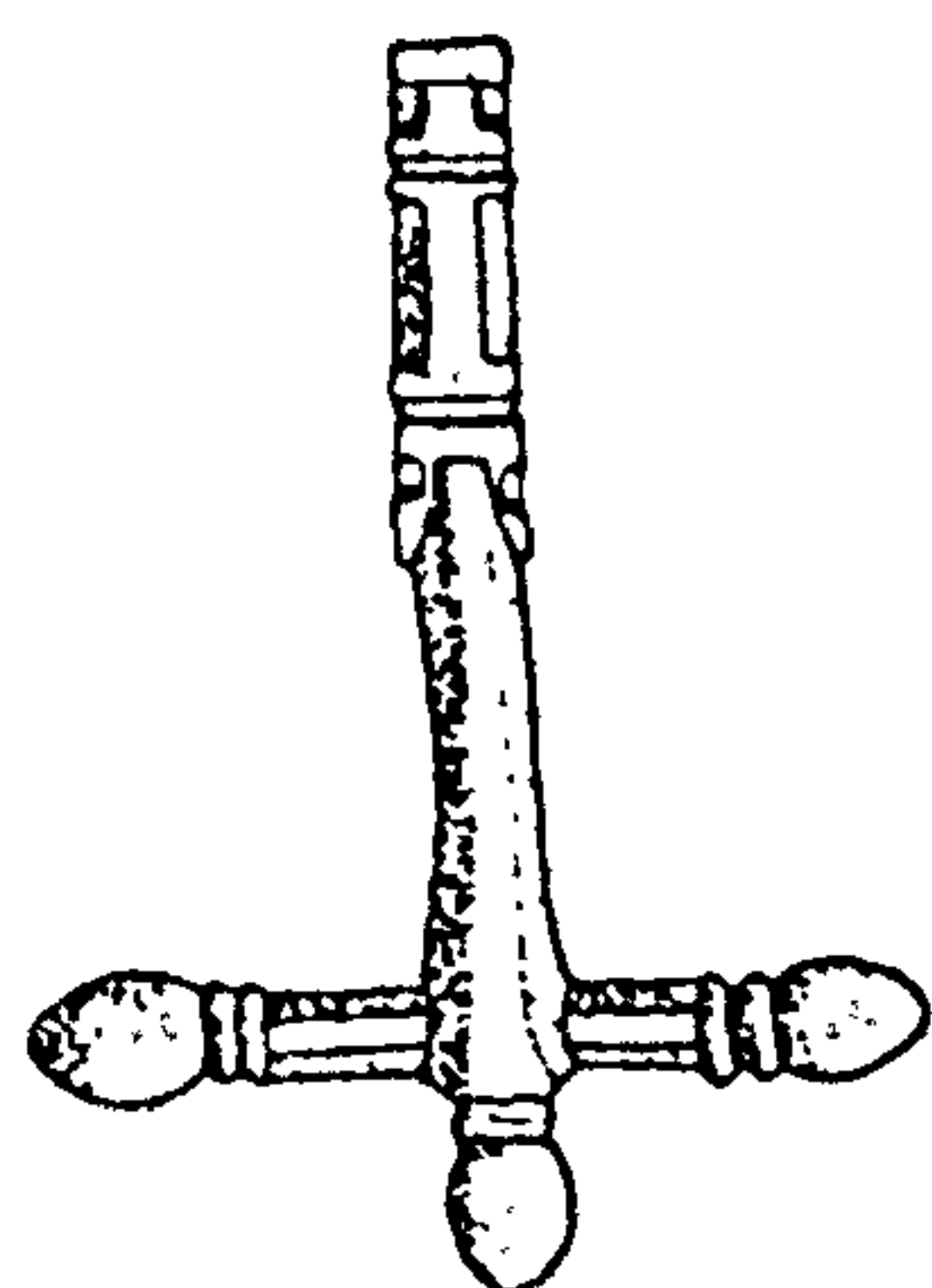


fig.20

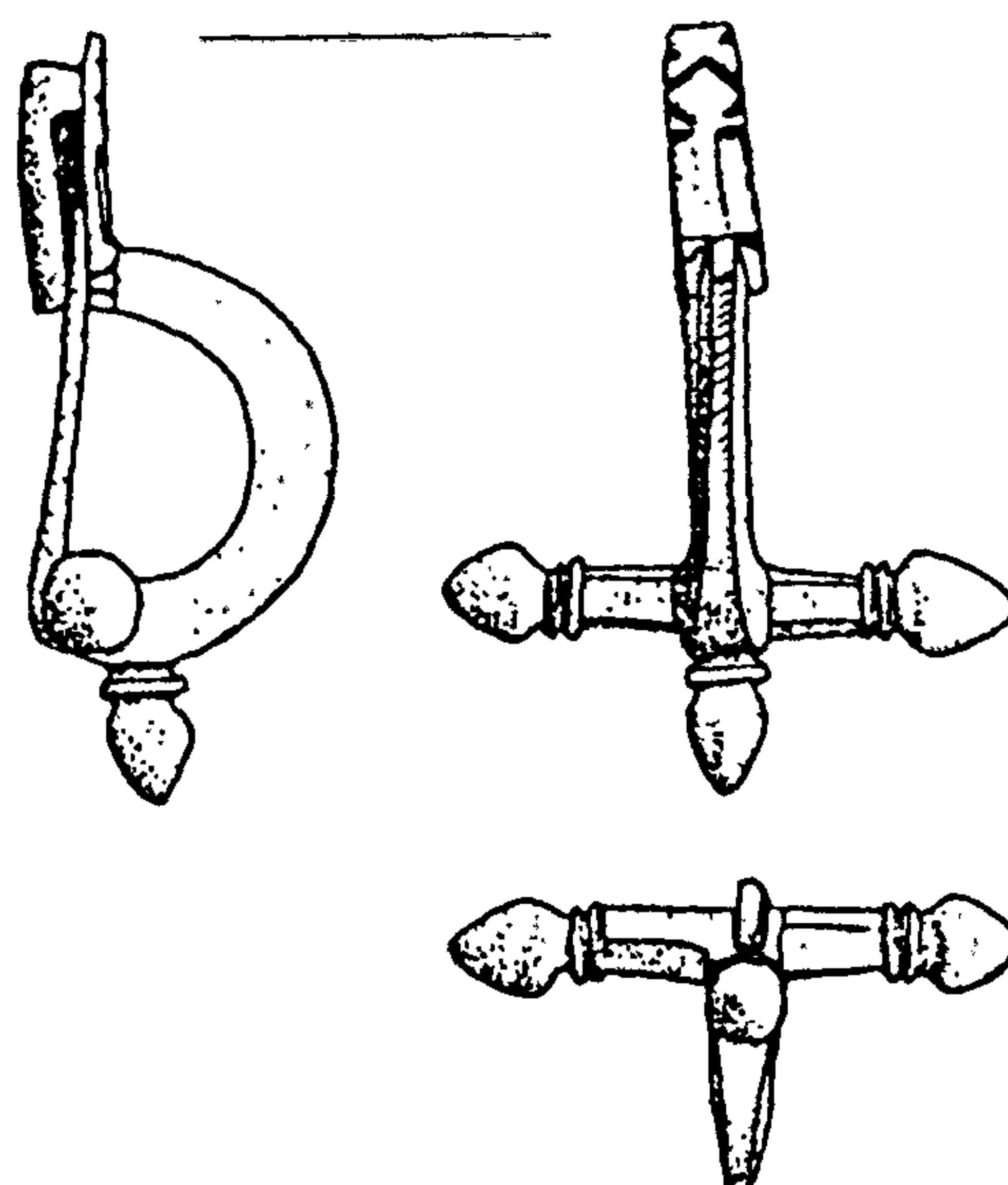


Type 1 egg or cone shaped knobs and double cuff at base (above)  
 Type 1 faceted knobs (below)

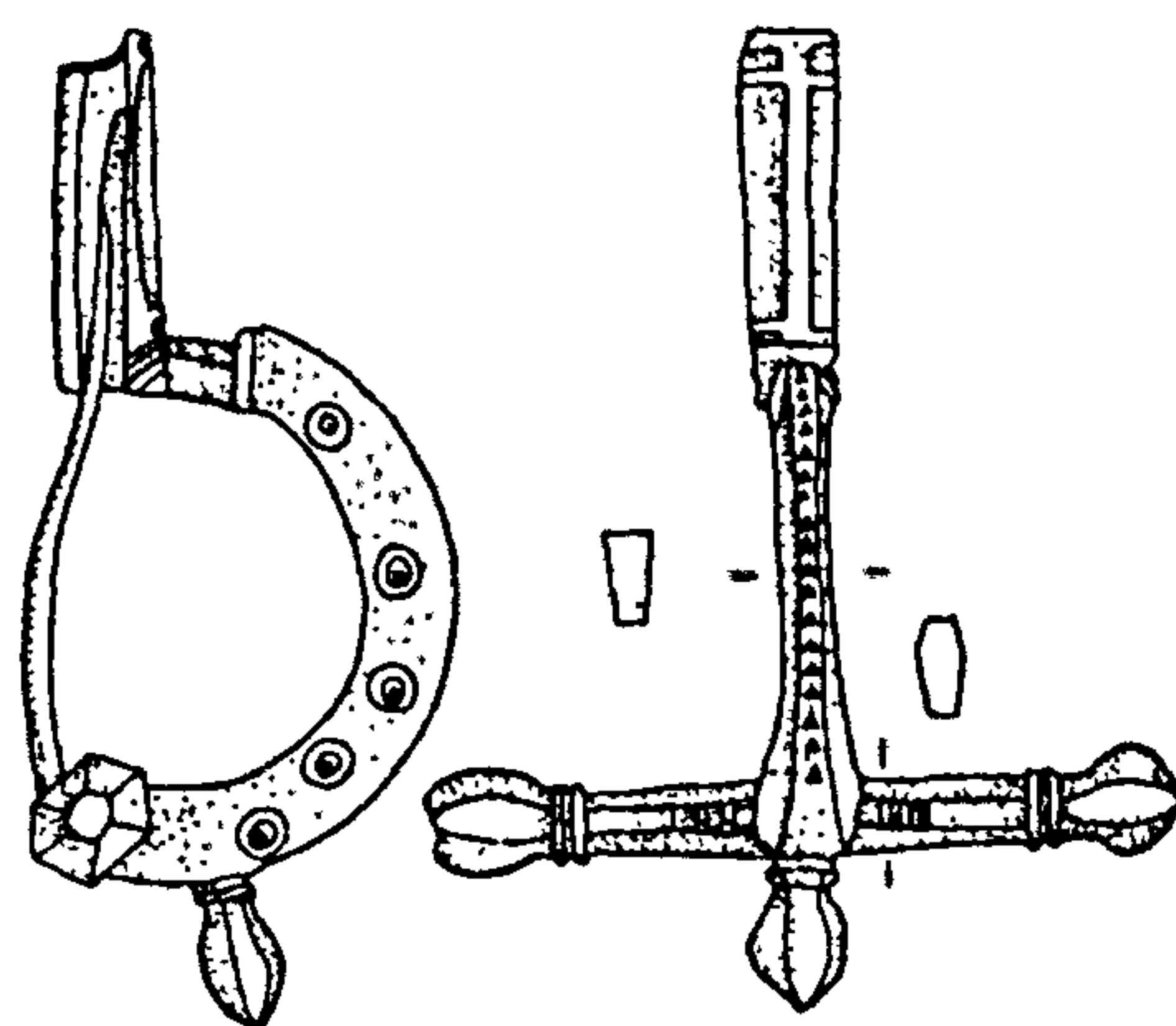


Göggingen  
 Keller 1971 taf.9 2

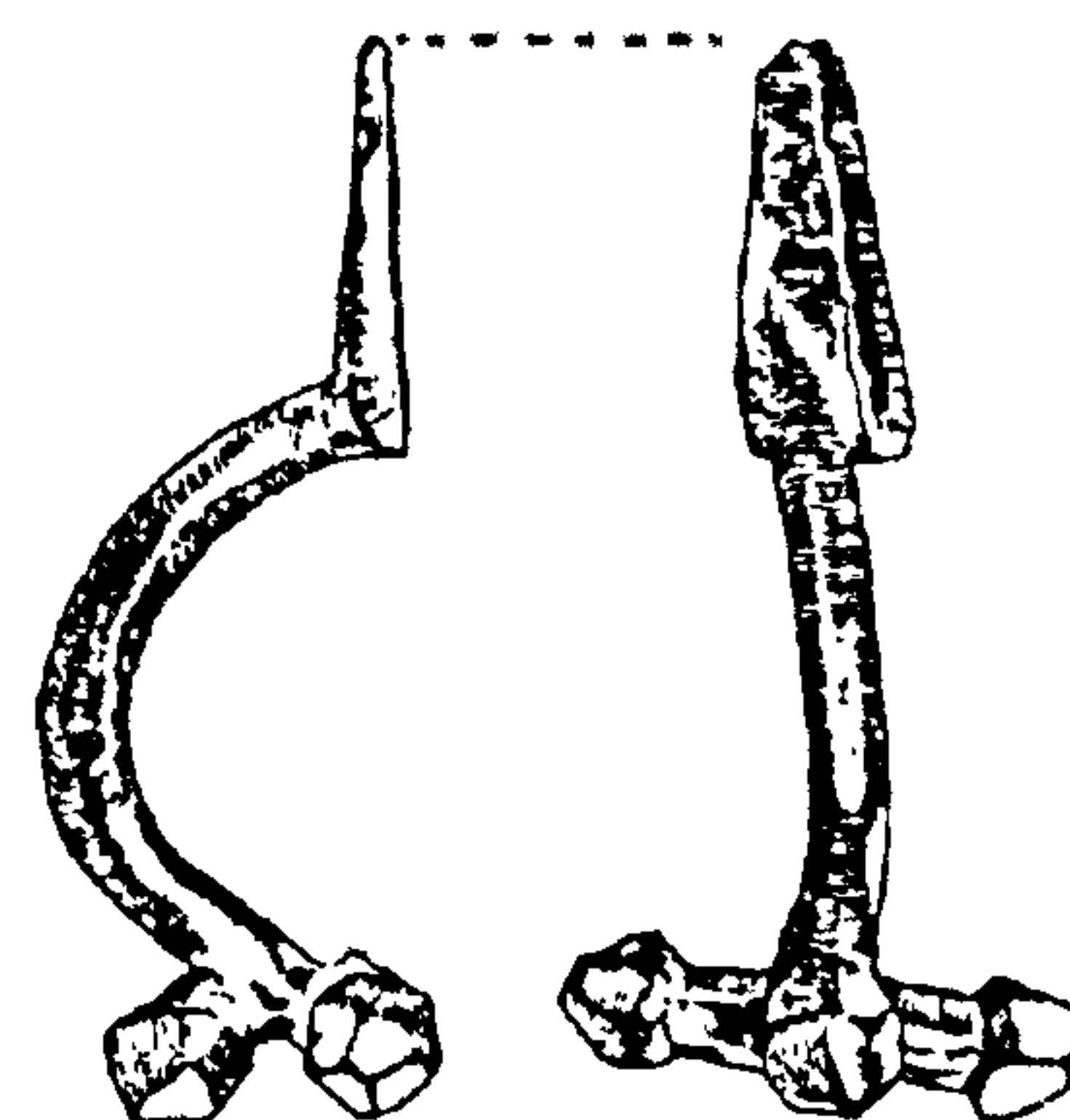
15



Kelheim-Affecking  
 Keller 1971 taf.46 6



Lauriacum (Enns)  
 Jobst 1975 no.240



Caerleon  
 Nash-Williams 1932  
 fig.32 11

at varying scales



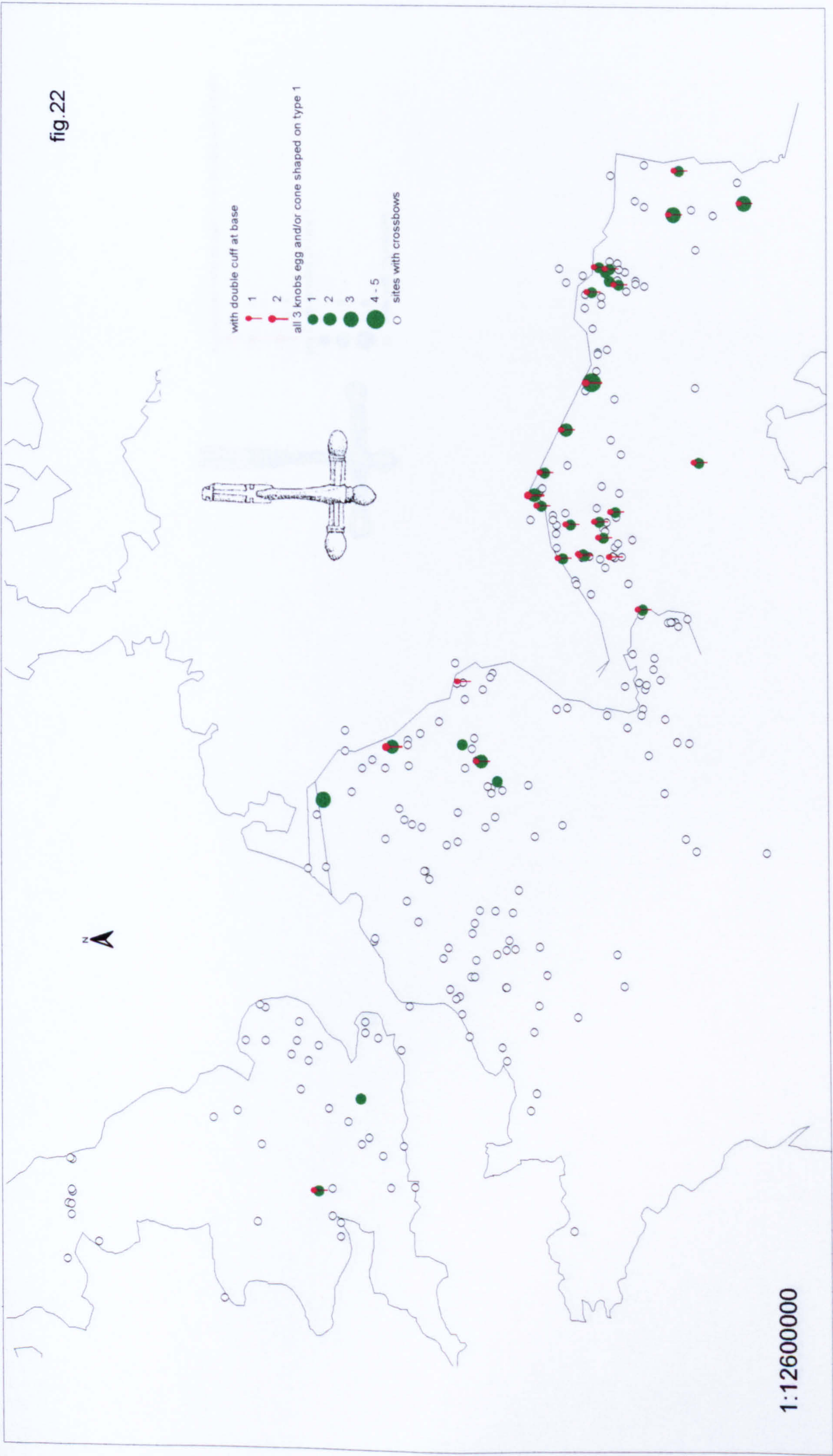


fig.22



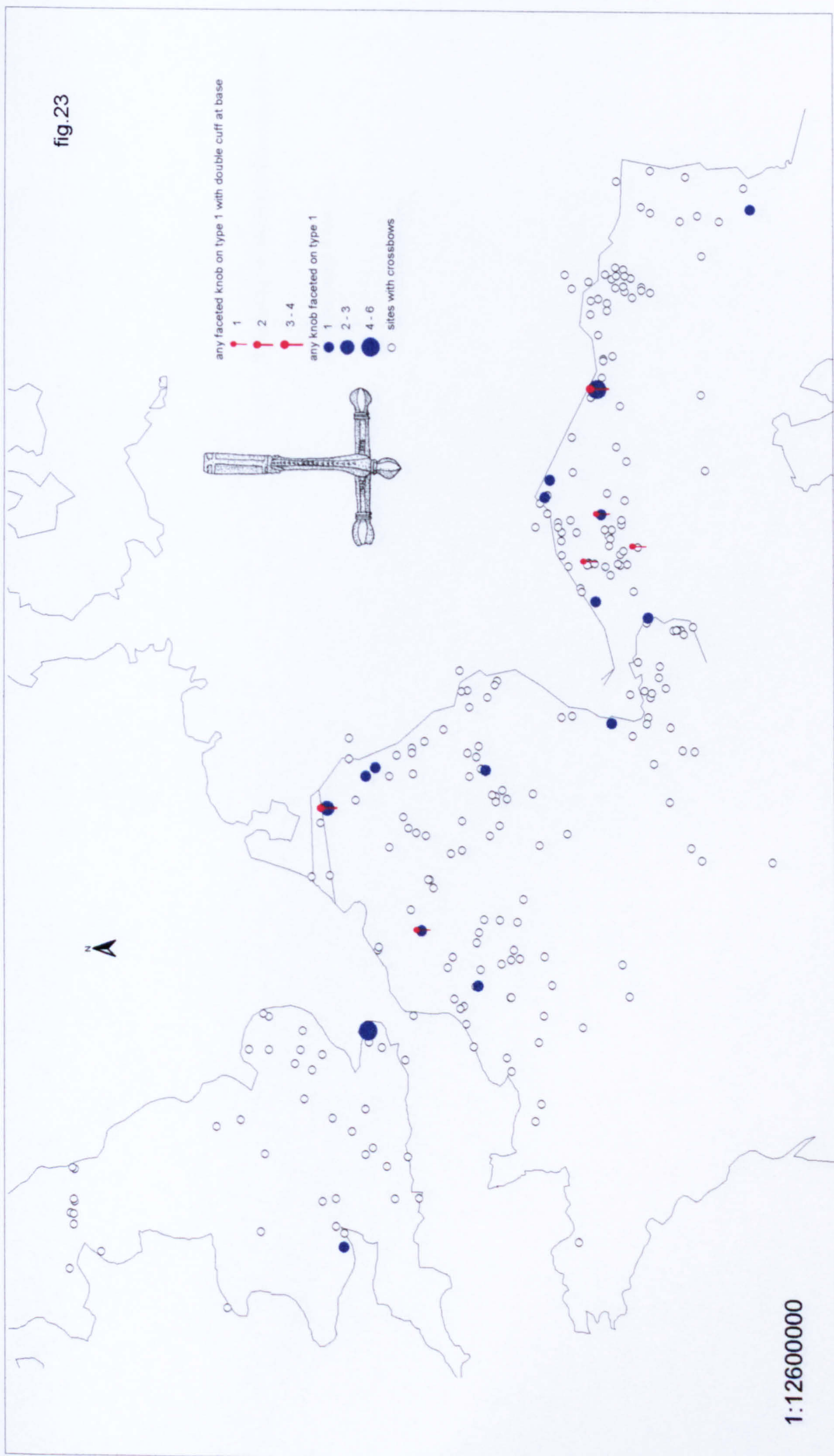


fig.23

1:12600000

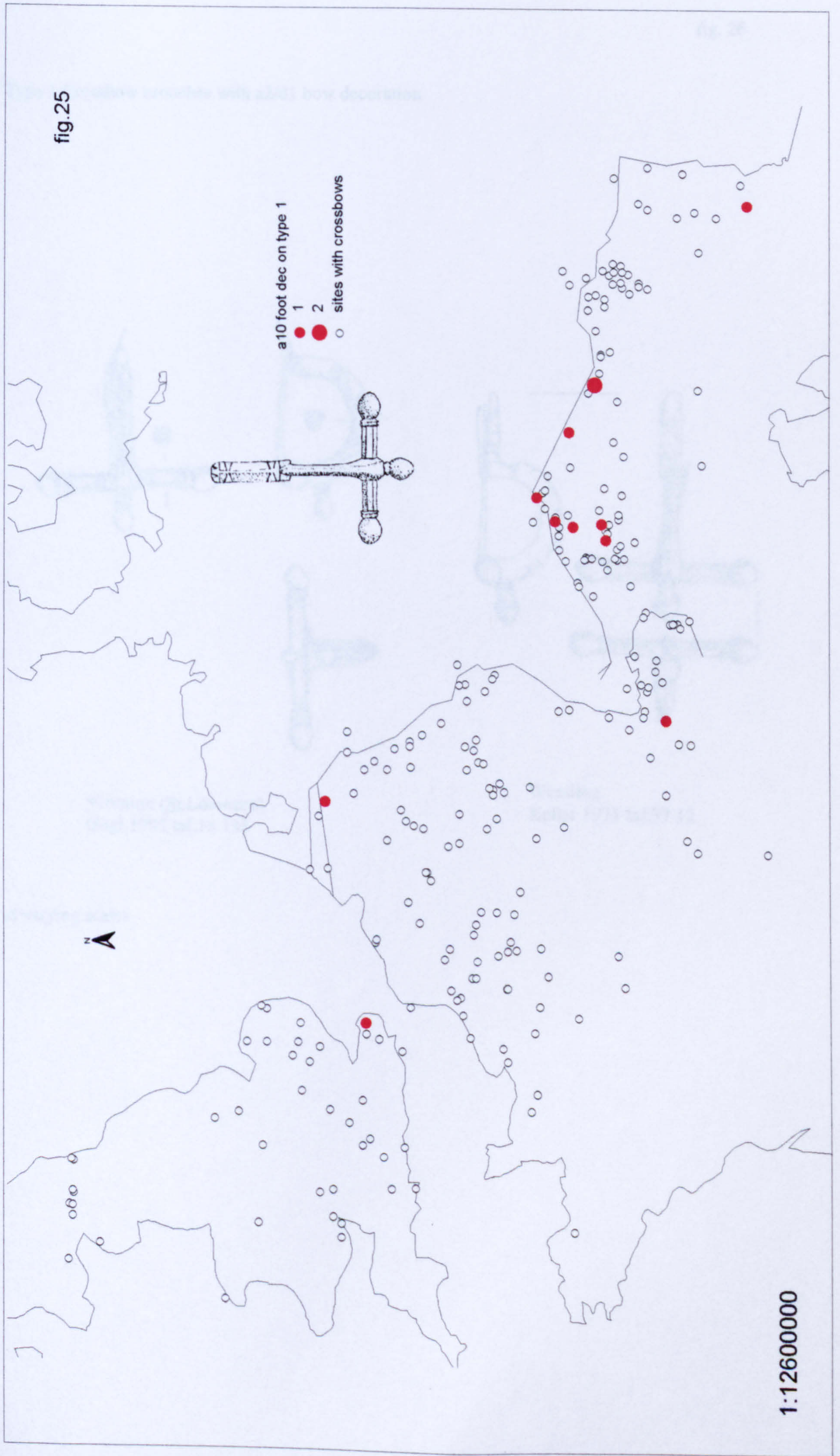




fig.24

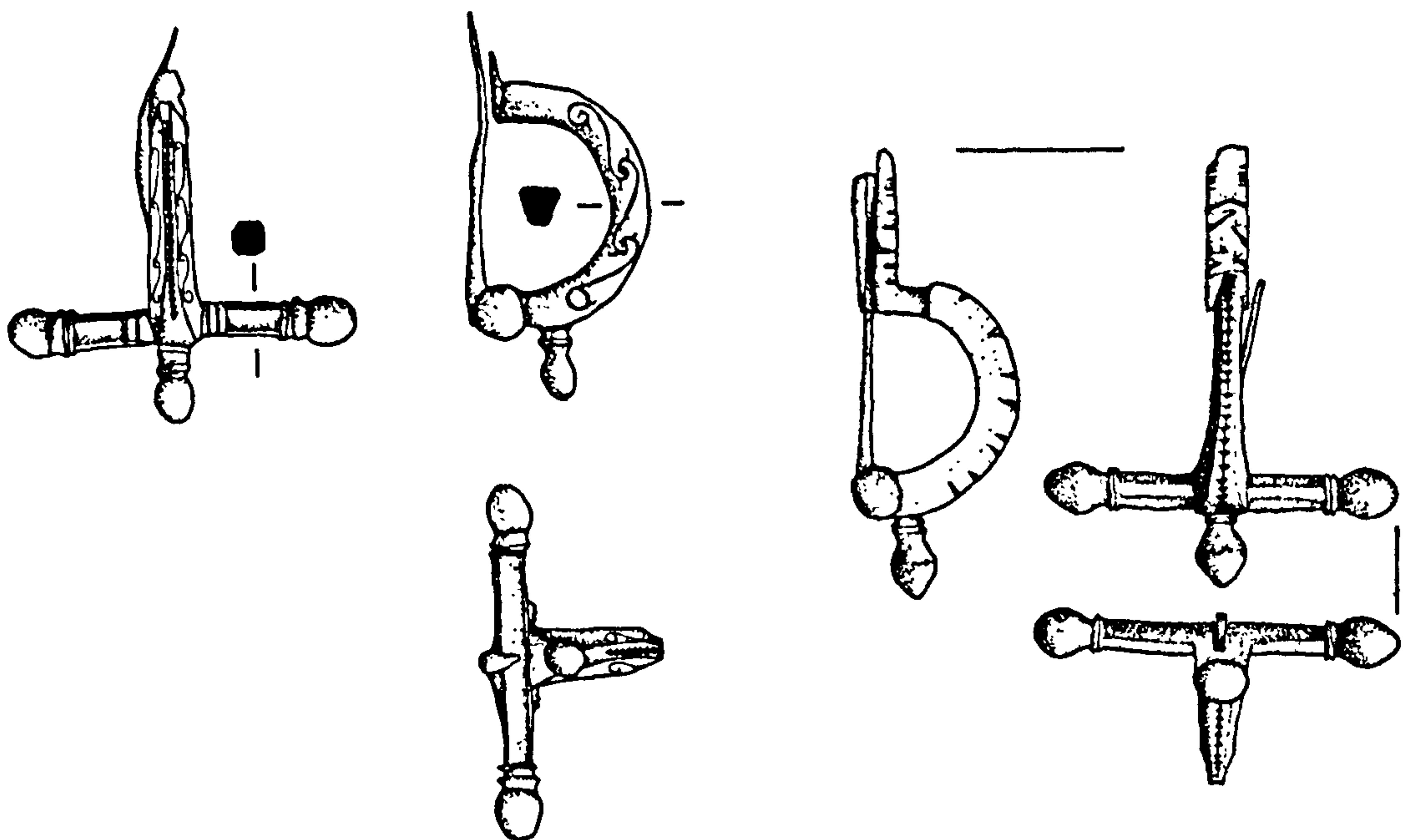
1:12600000







Type 1 Crossbow brooches with a2/d1 bow decoration



Virunum (St. Lorenzen)  
Gugl 1995 taf.18 138

Wessling  
Keller 1971 taf.37 12

at varying scales



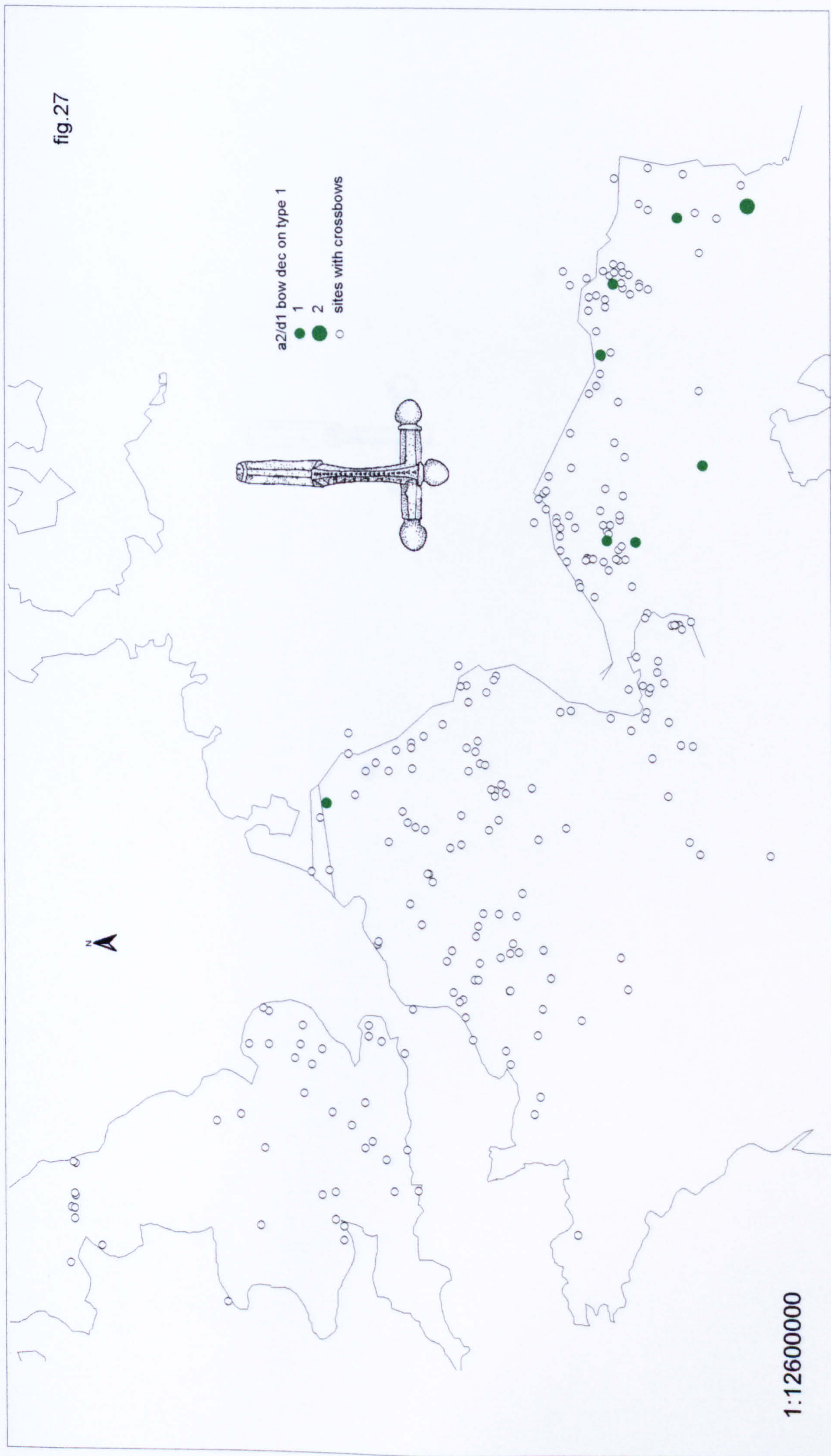


fig.27



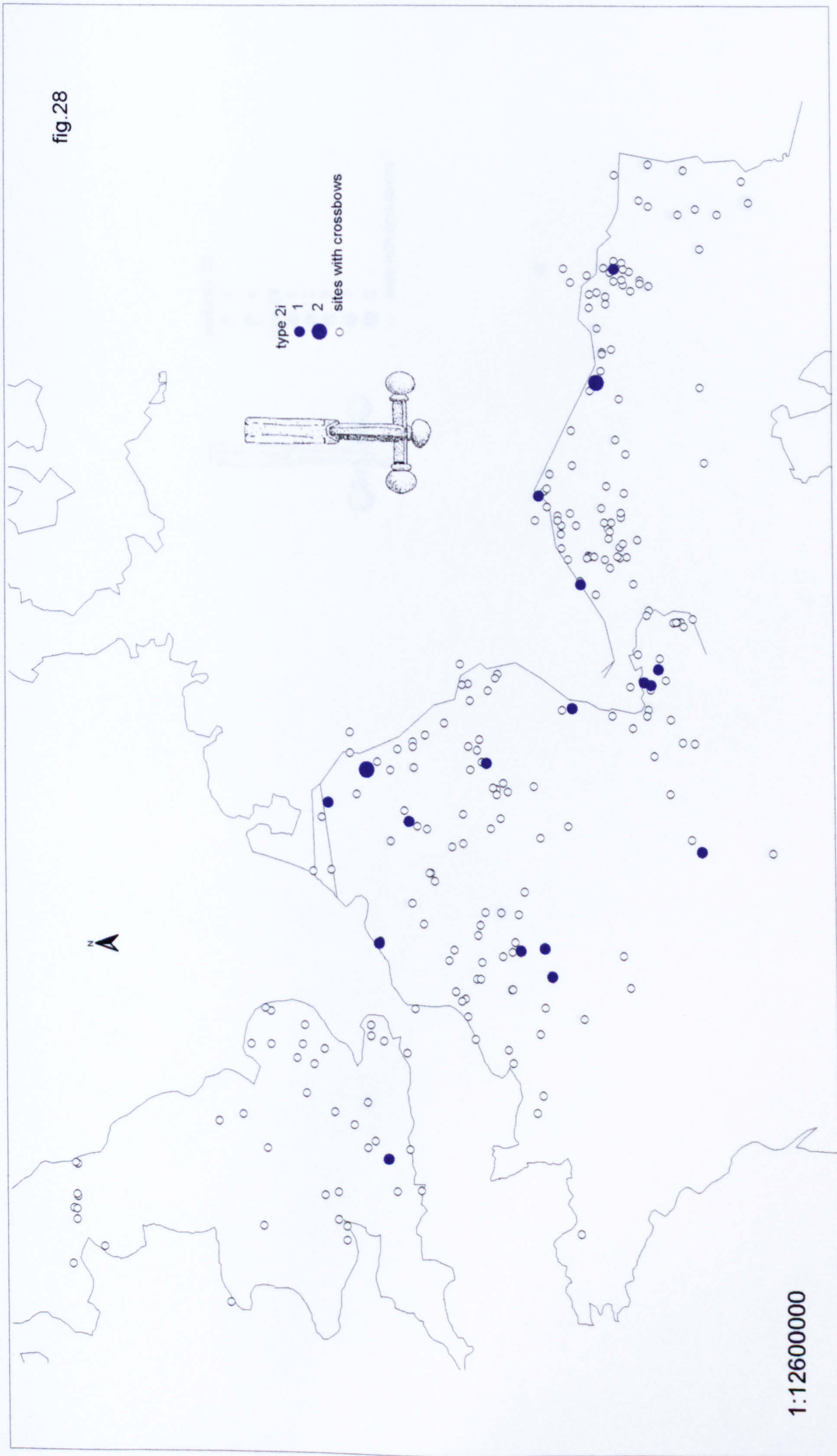


fig.28



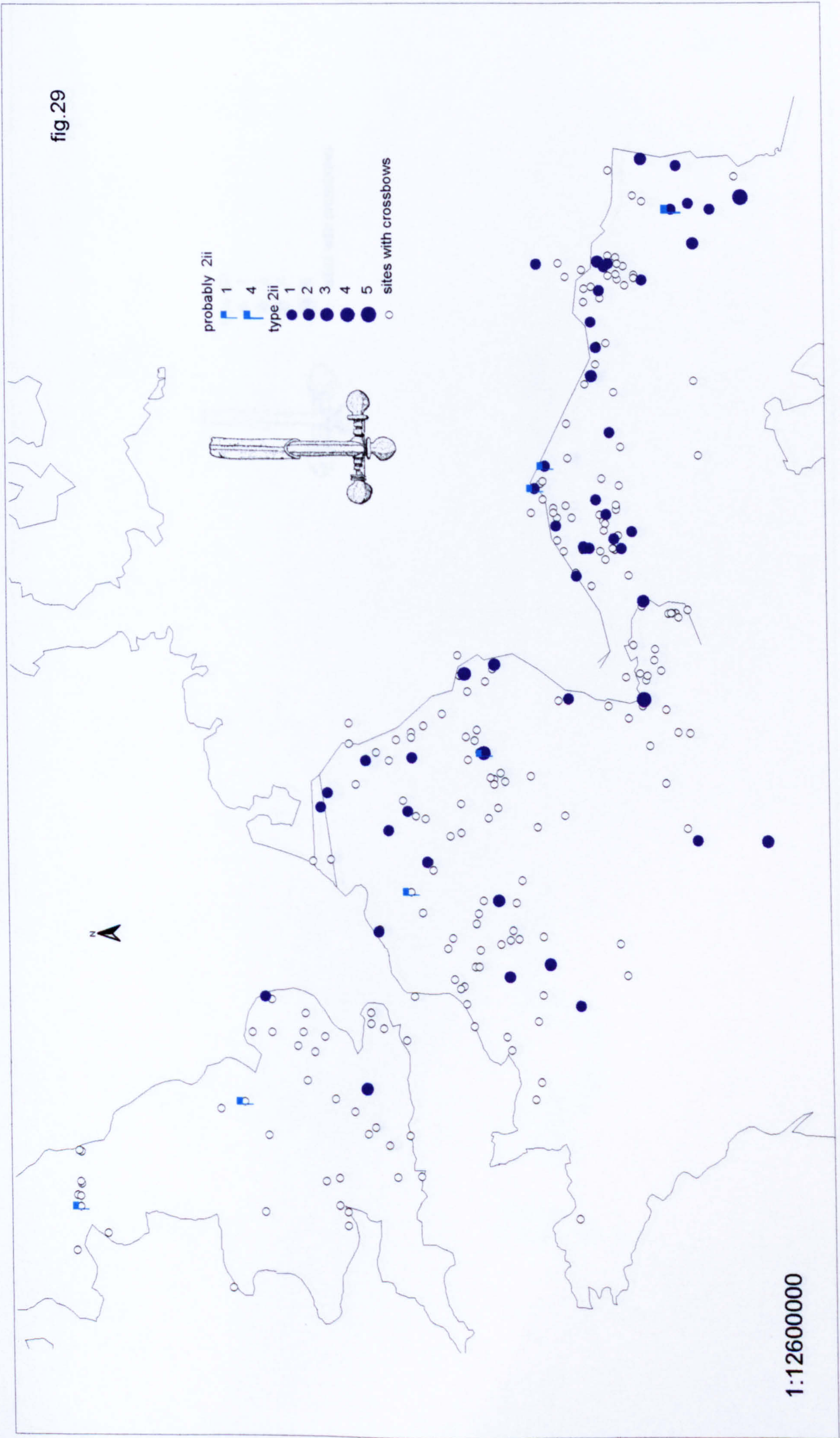


fig.29



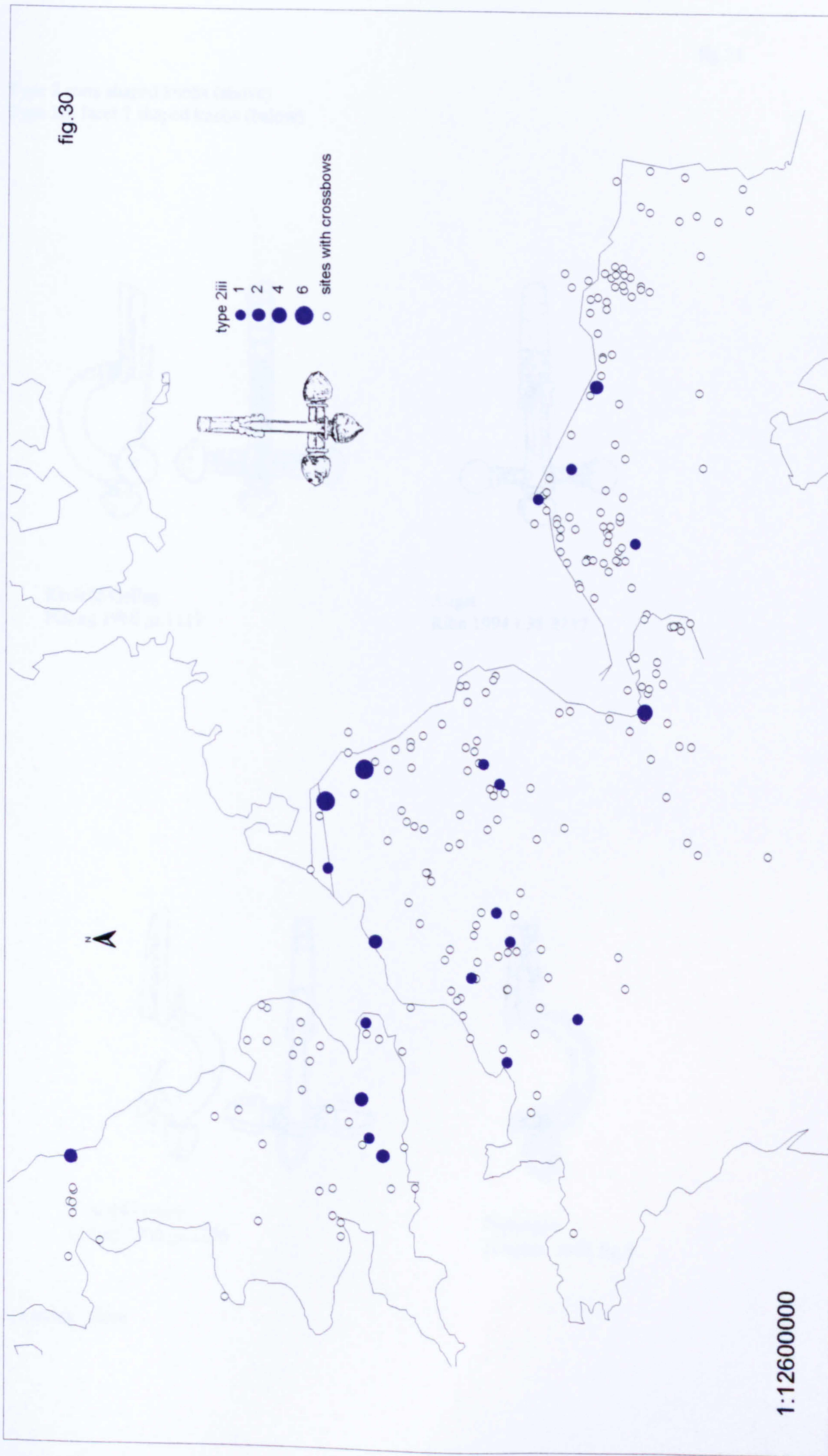
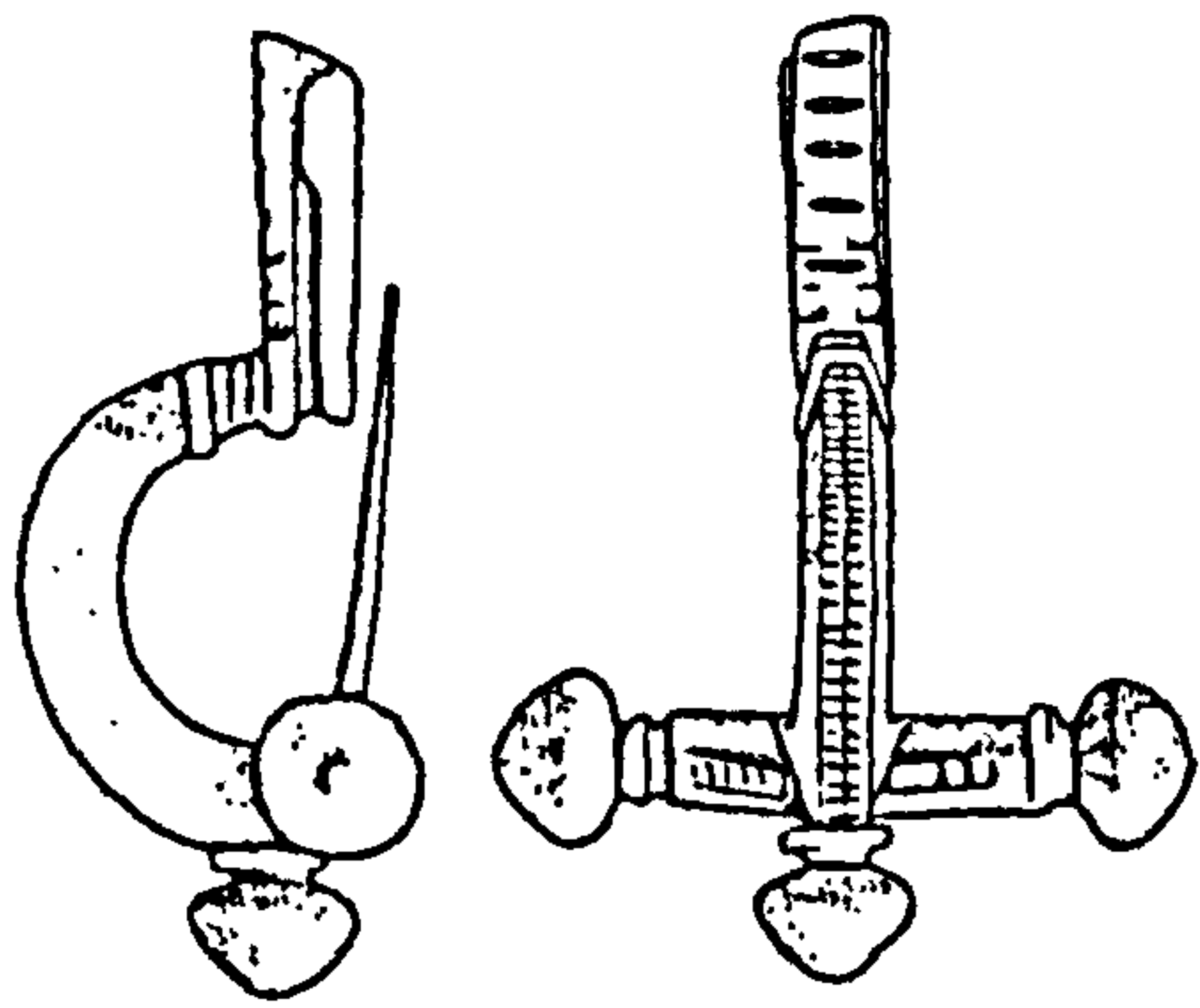


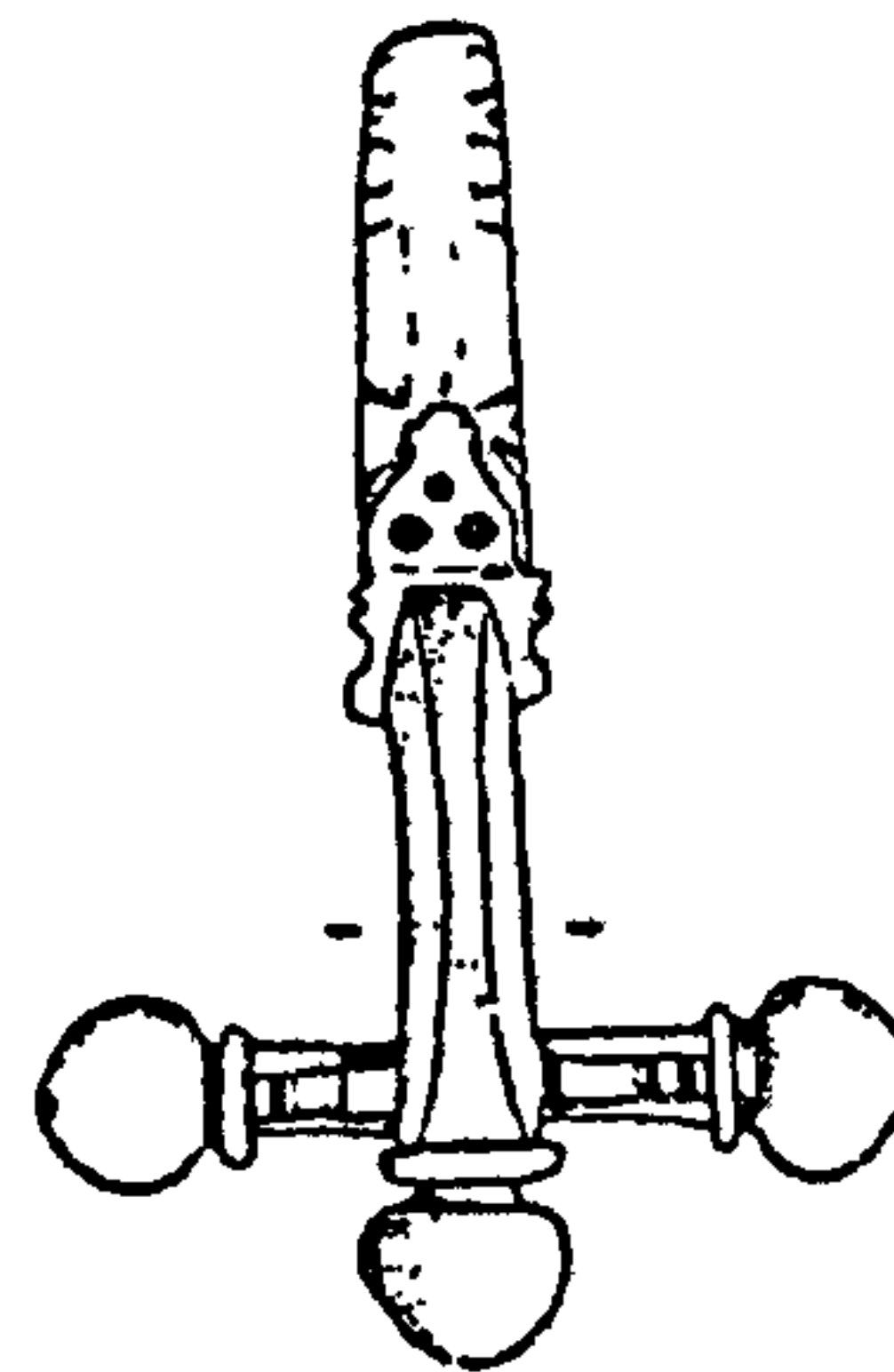
fig.30



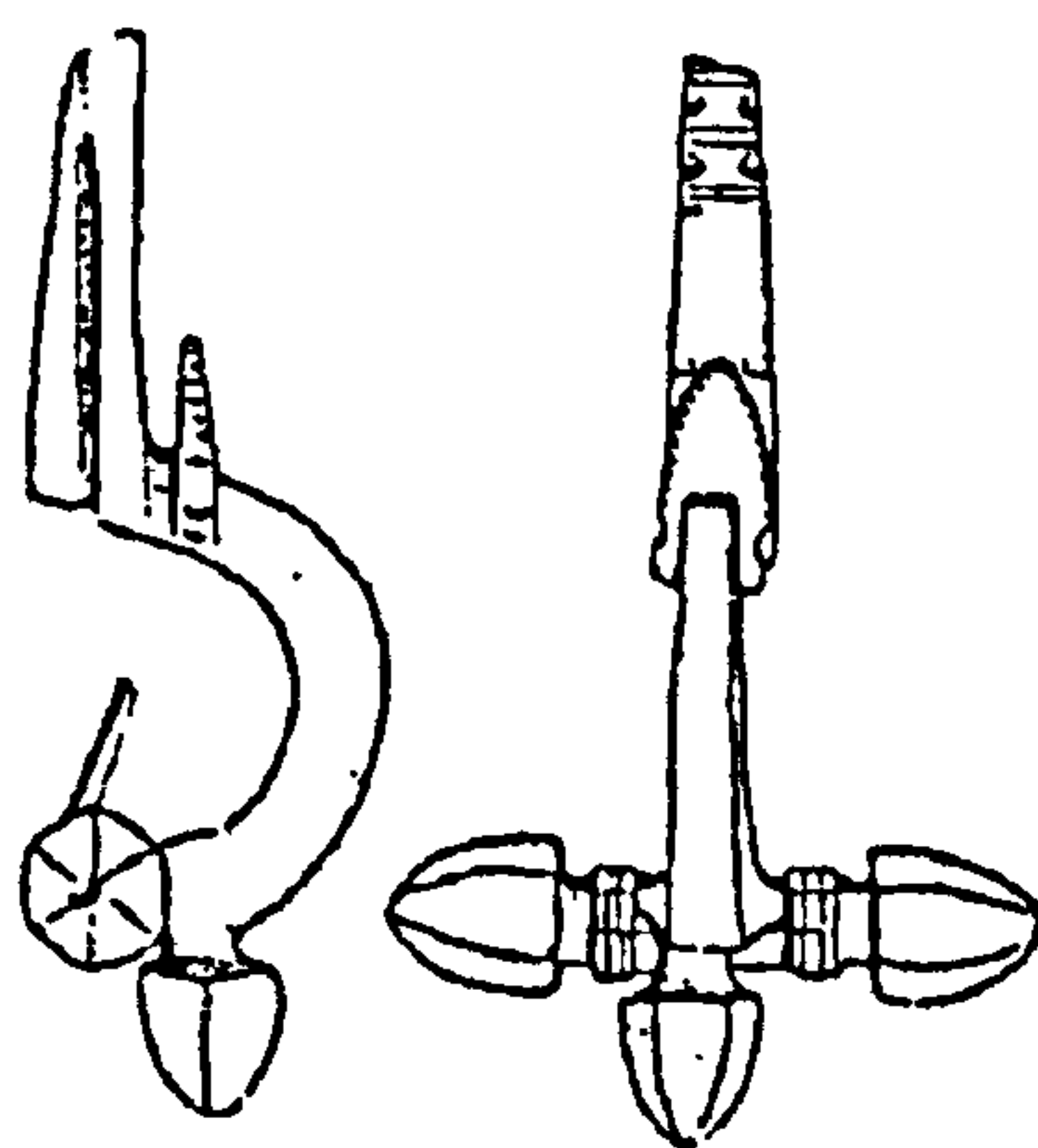
Type 2 cone shaped knobs (above)  
Type 2iii facet 7 shaped knobs (below)



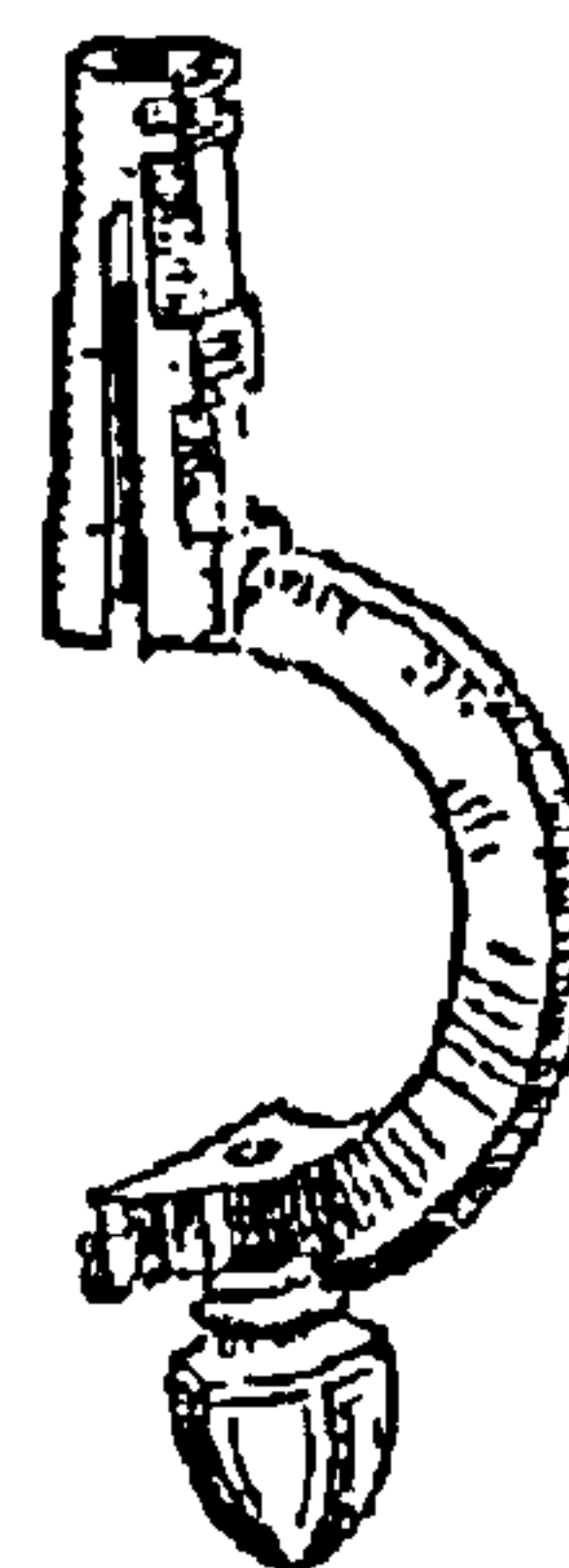
Krefeld-Gellep  
Piriling 1966 gr.1117



Augst  
Riha 1994 t.38 2737



Krefeld-Gellep  
Piriling 1966 gr.1236



Nijmegen  
Burgers 1968 fig.9

at varying scales





fig.32





fig.33



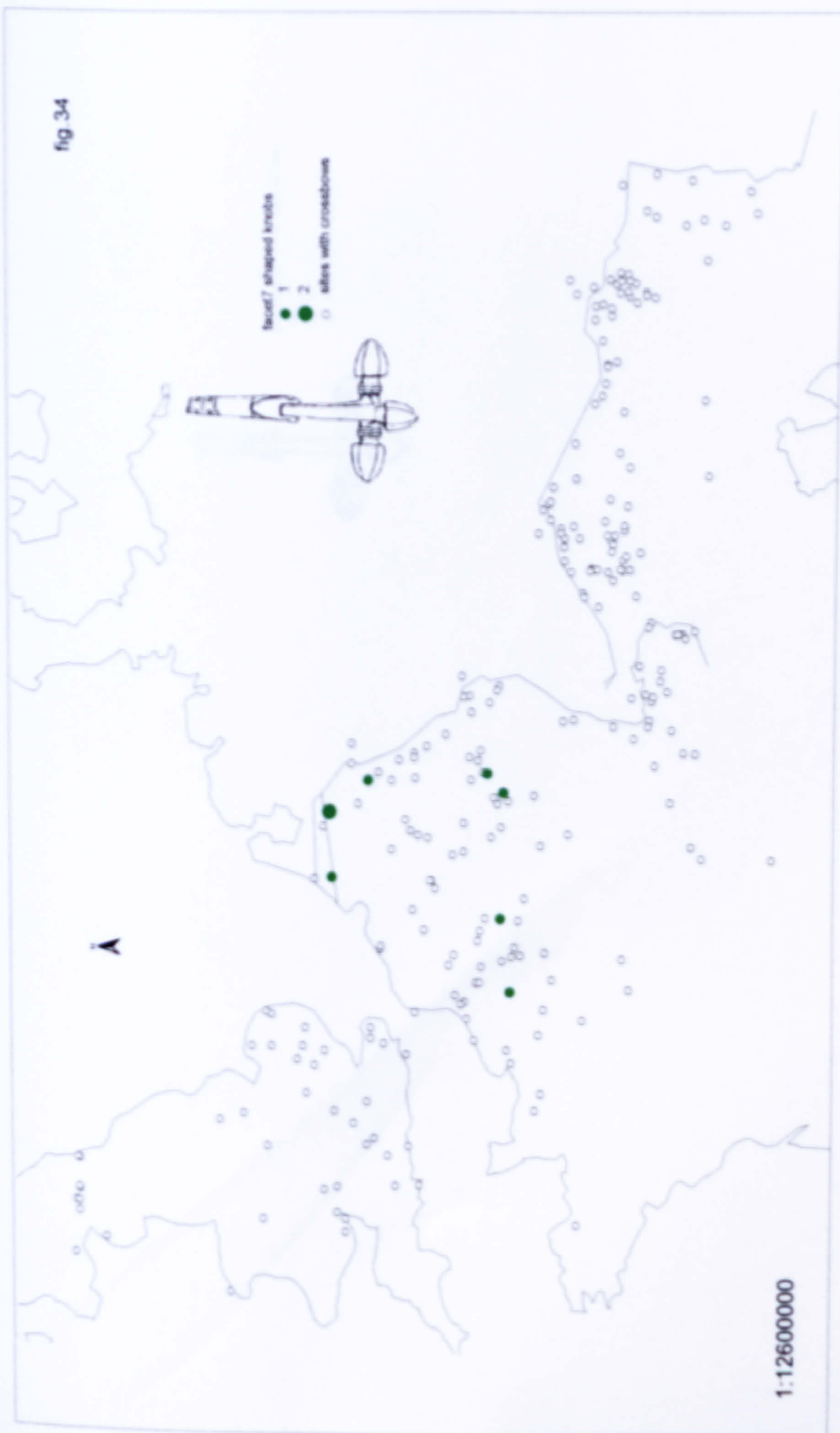


fig. 34



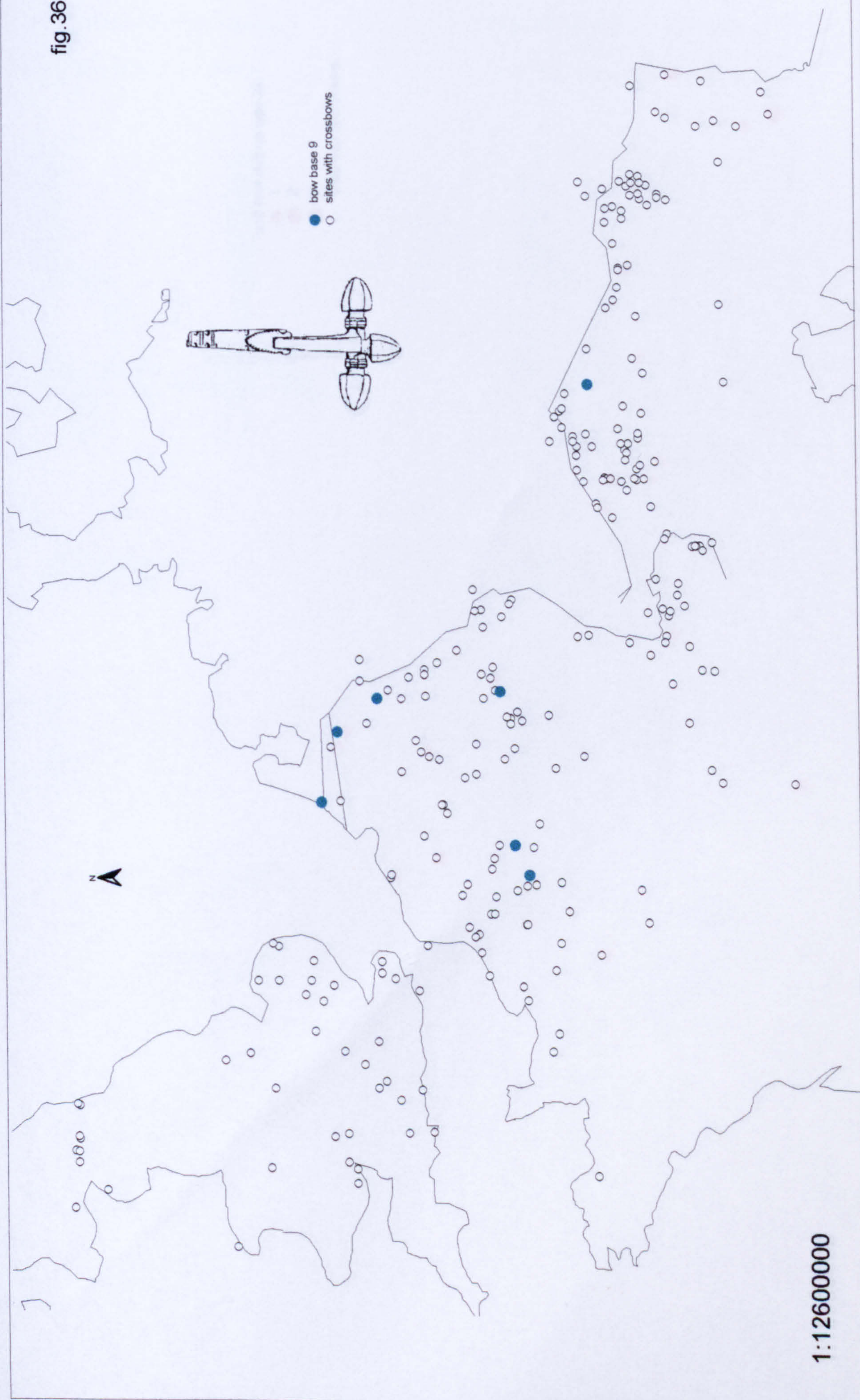


fig.35

1:12600000



fig.36



1:12600000



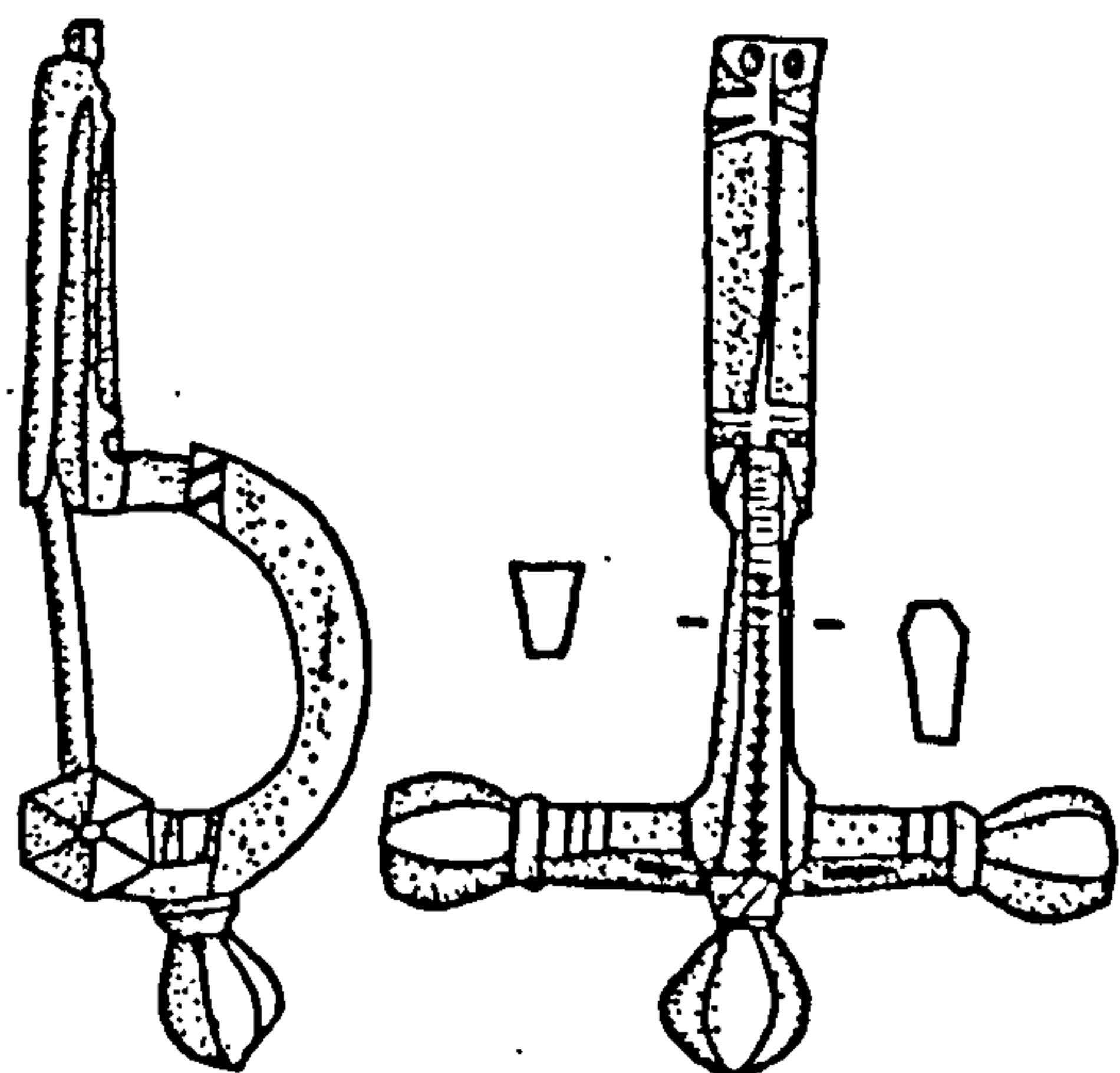


fig.37



Type 2 with b17 foot dec (above)

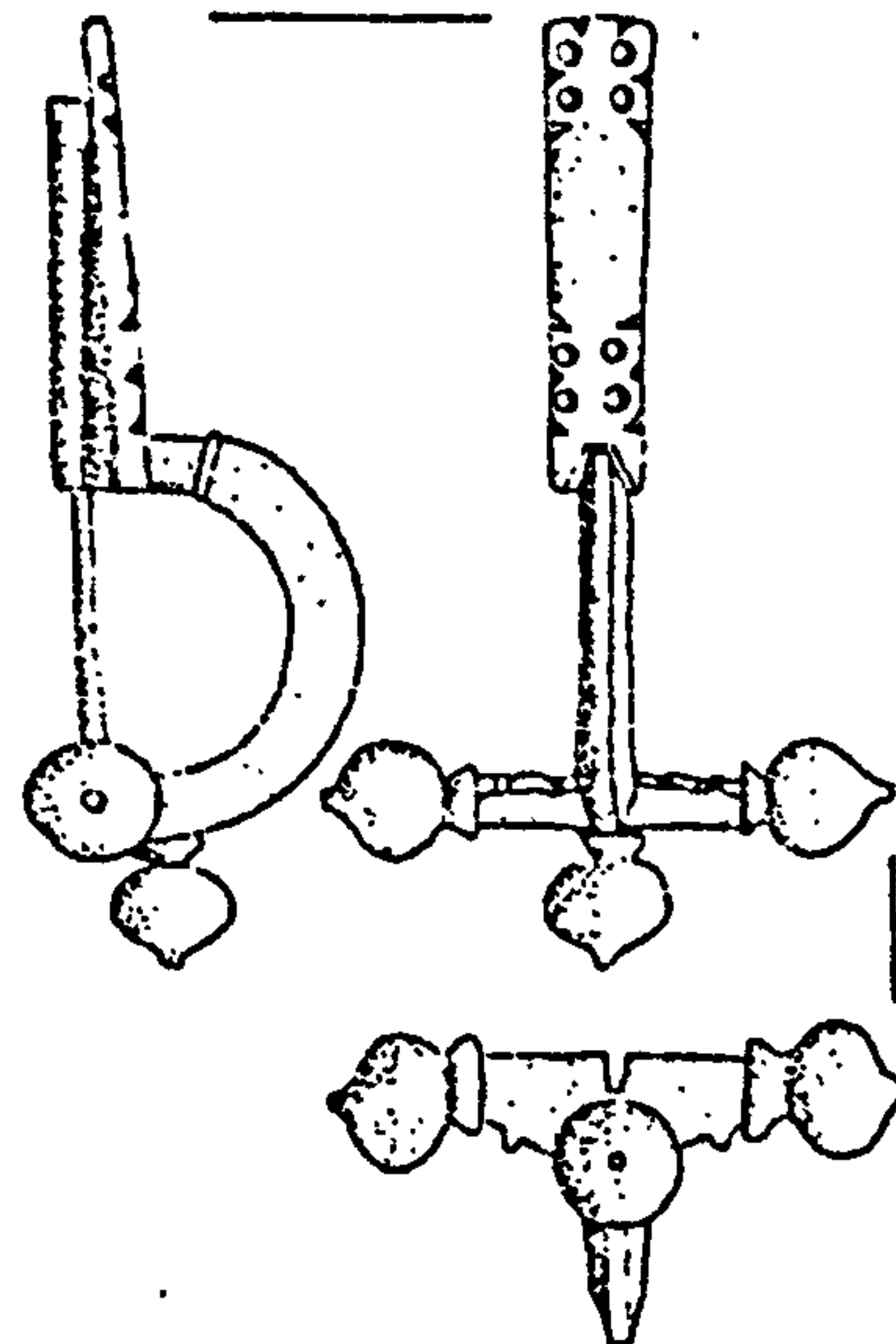
Type 2 with b4 foot dec (below)



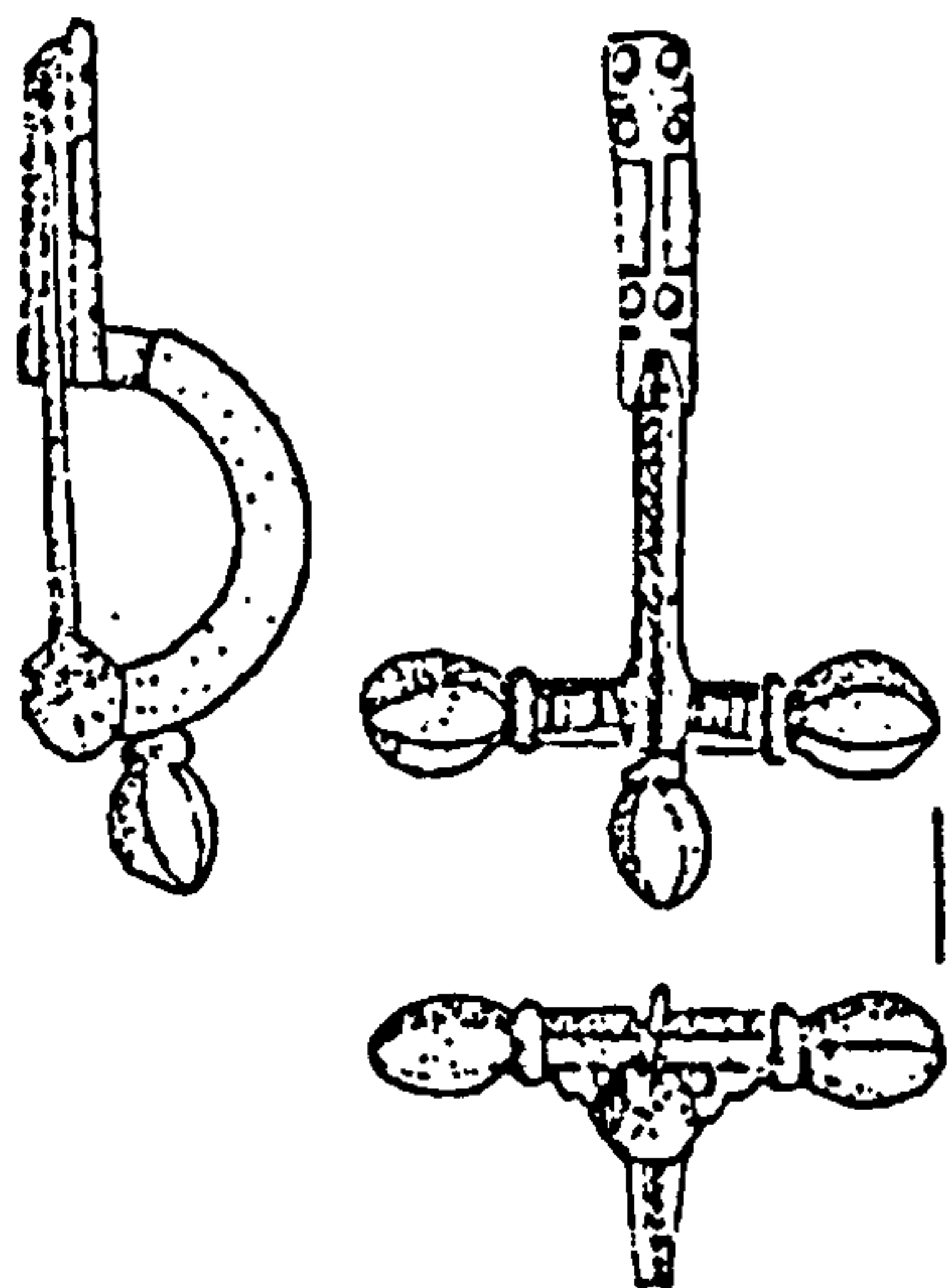
Lauriacum (Enns )  
Jobst 1975 no.246

Type 3/4 with b5 foot dec (above)

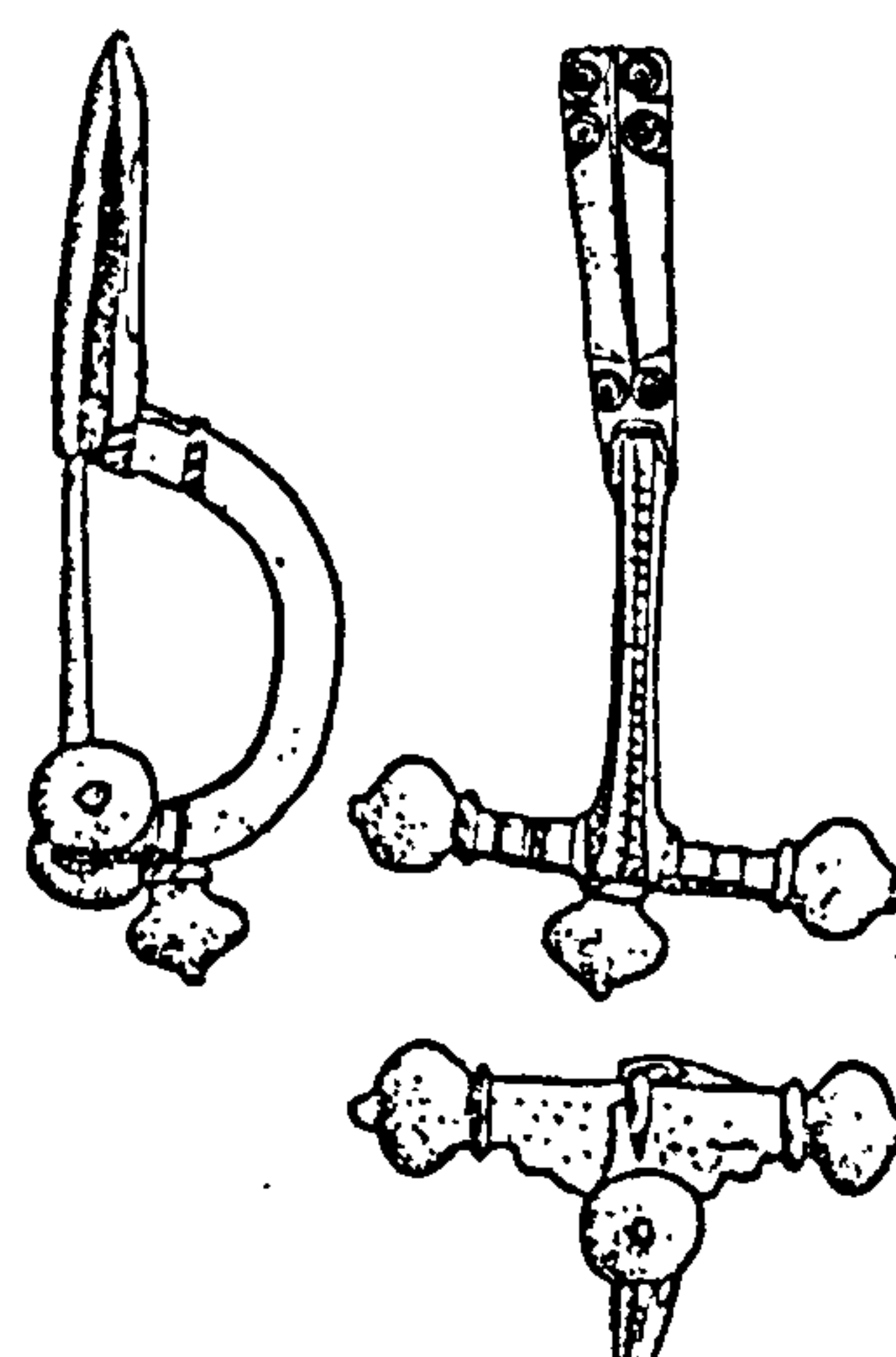
Type 3/4 with b4 foot dec (below)



Günzburg  
Keller 1971 taf.12 4



Schwaben  
Keller 1971 taf.8 3



Burgheim  
Keller 1971 taf.16 1

at varying scales



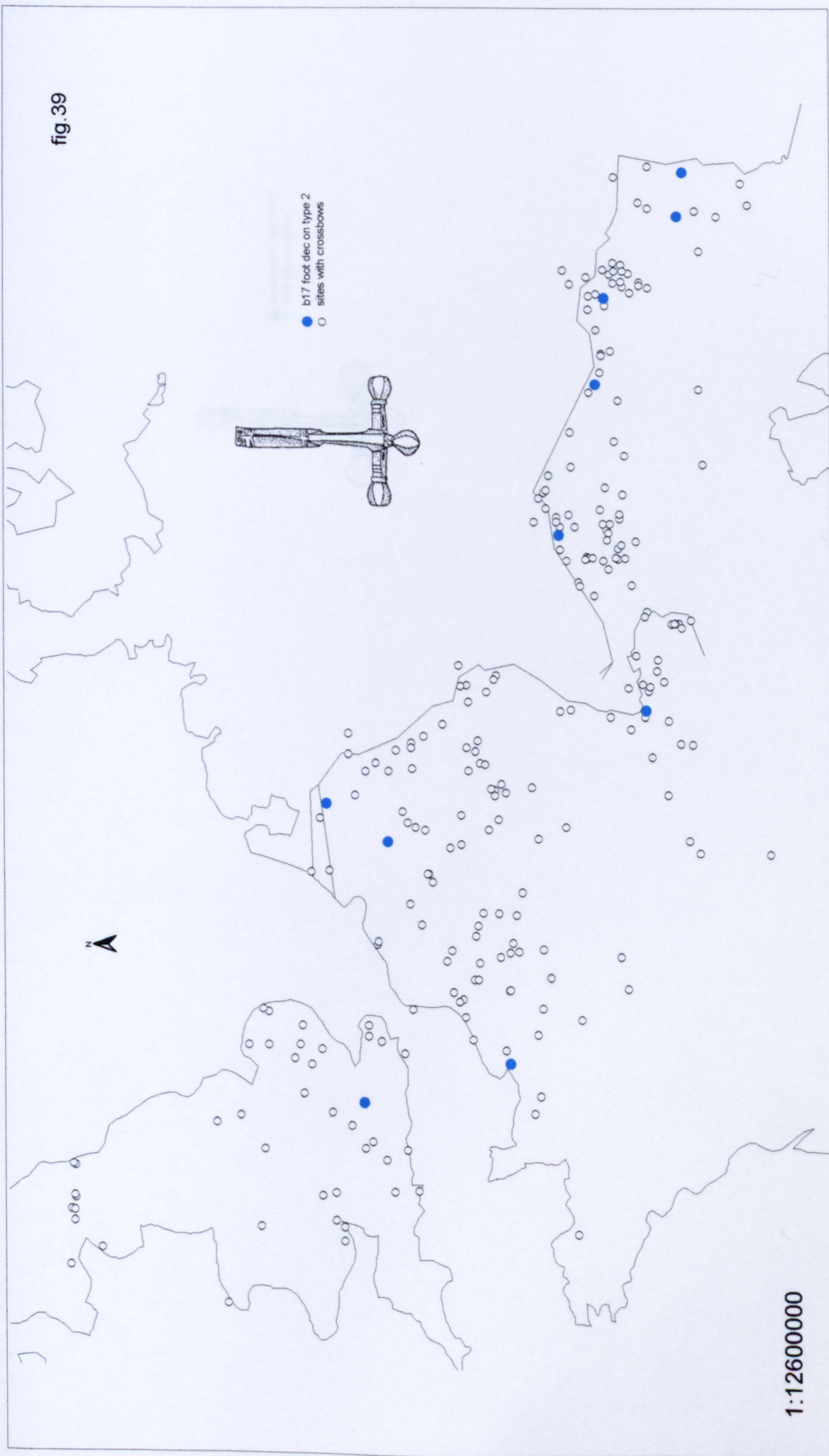


fig.39

1:12600000



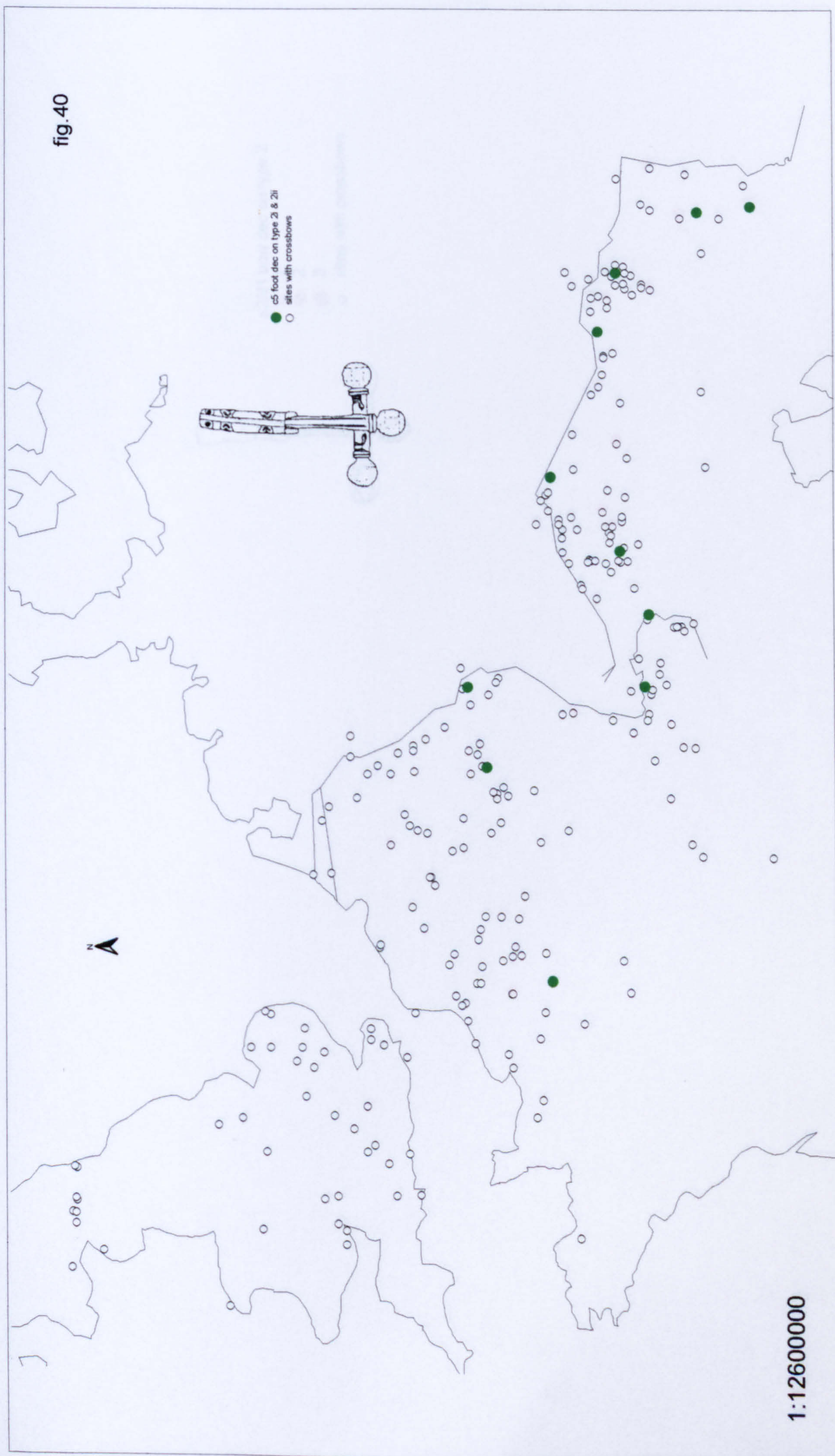


fig.40

1:12600000



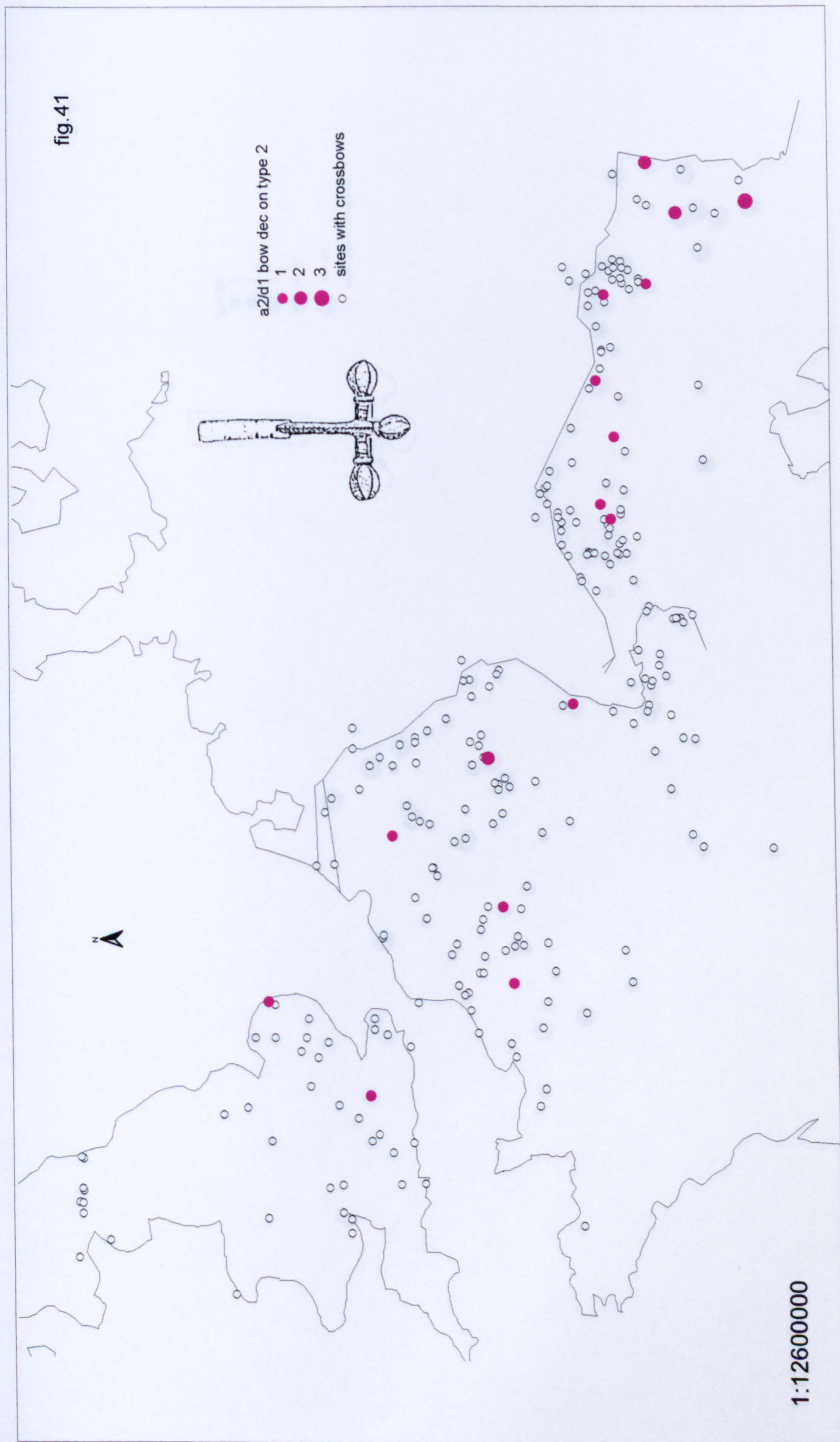
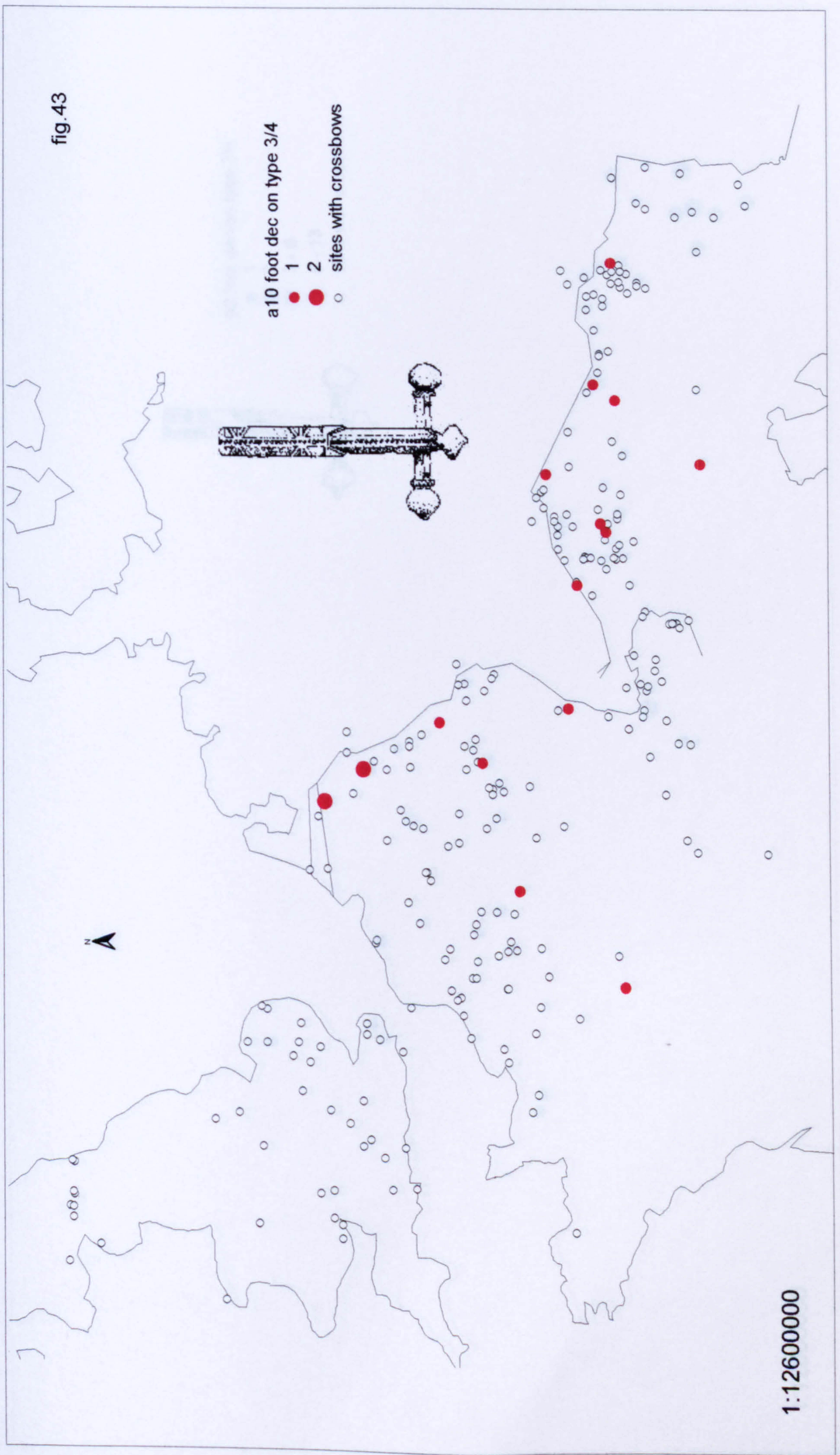






fig.42







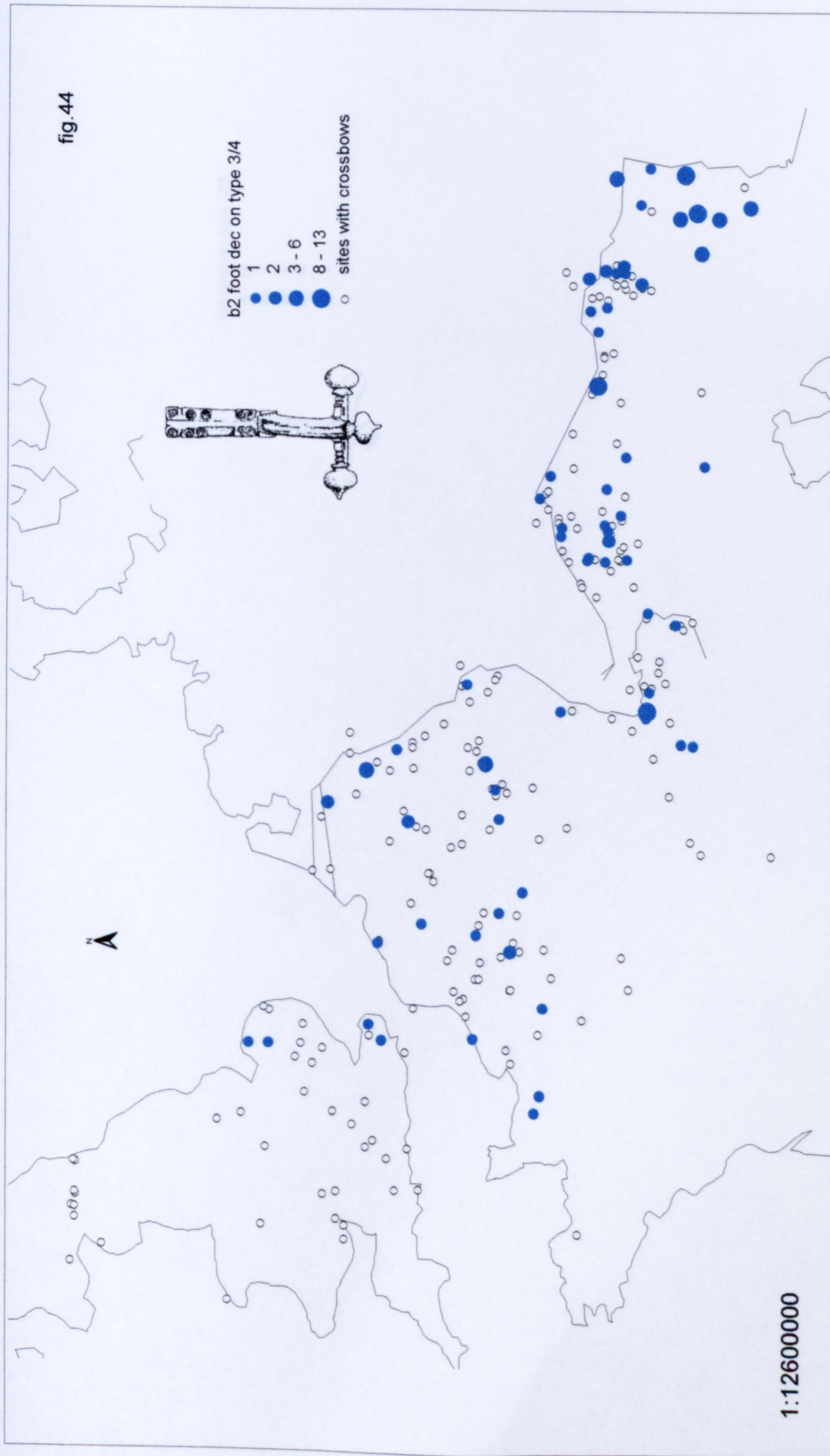






fig.45

1:12600000





fig. 46

1:12600000



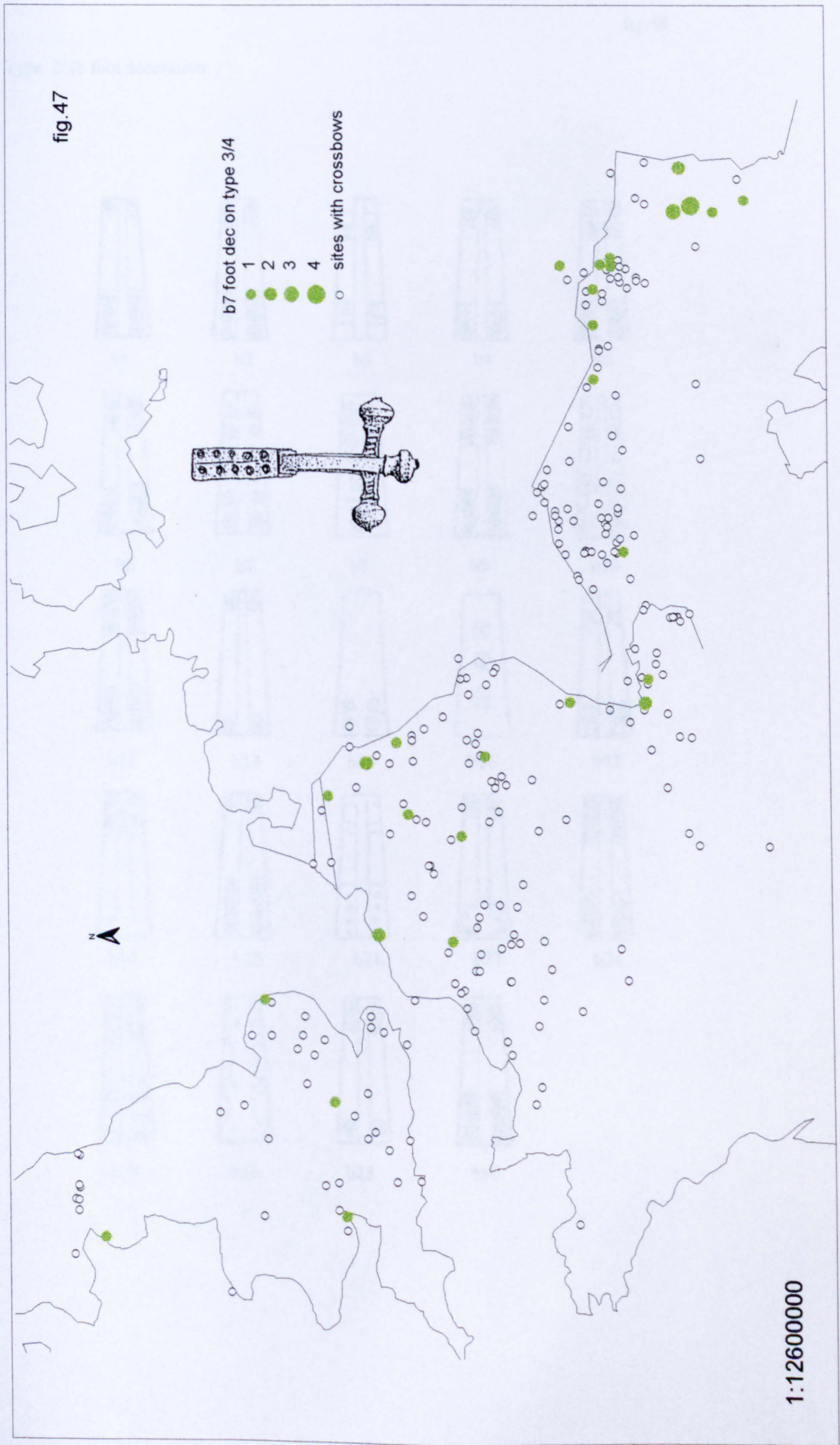
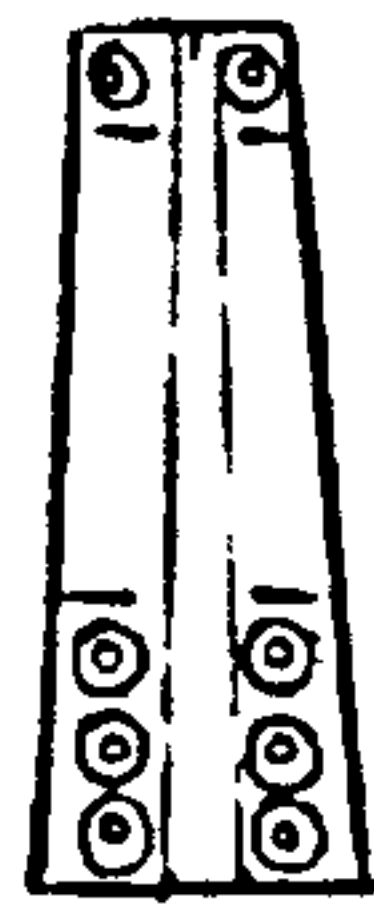


fig.47



## Type 3/4b foot decoration



b1



b2



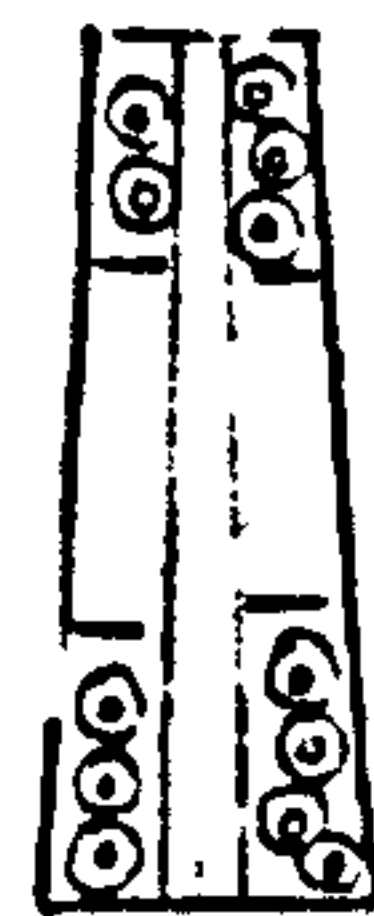
b3



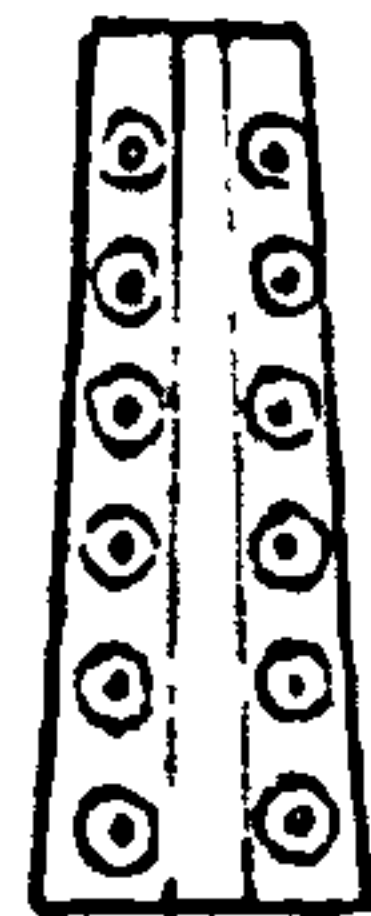
b4



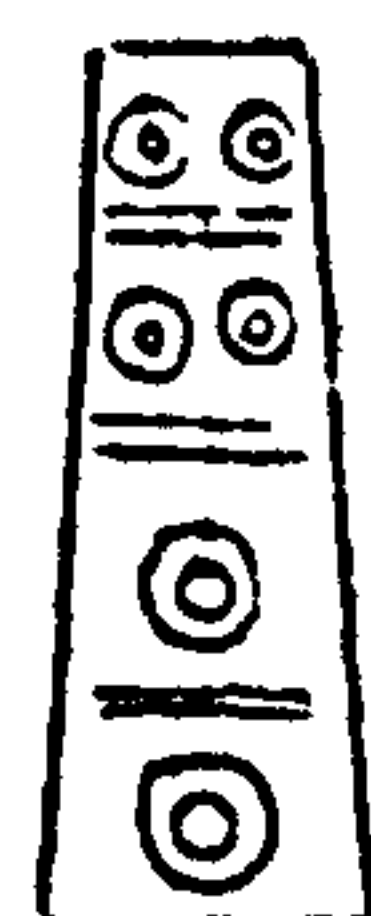
b5



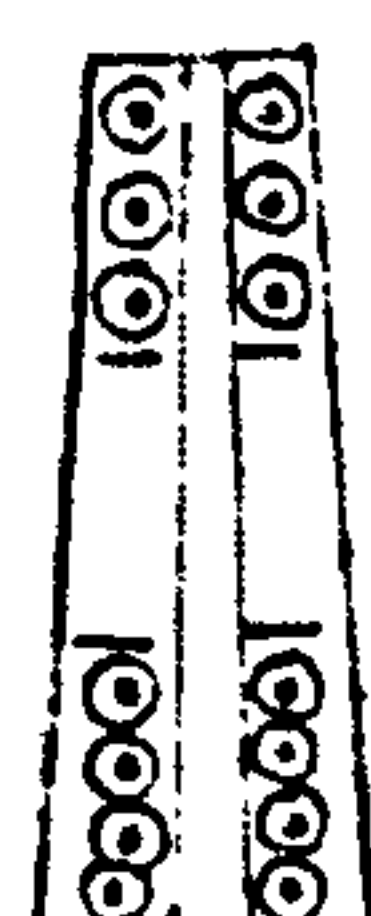
b6



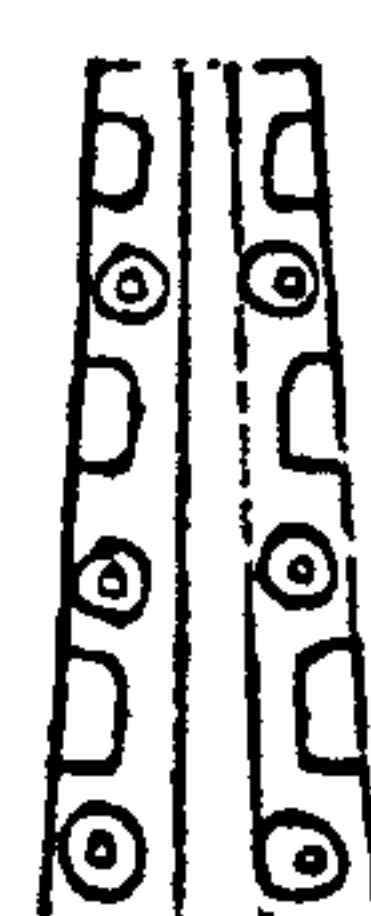
b7



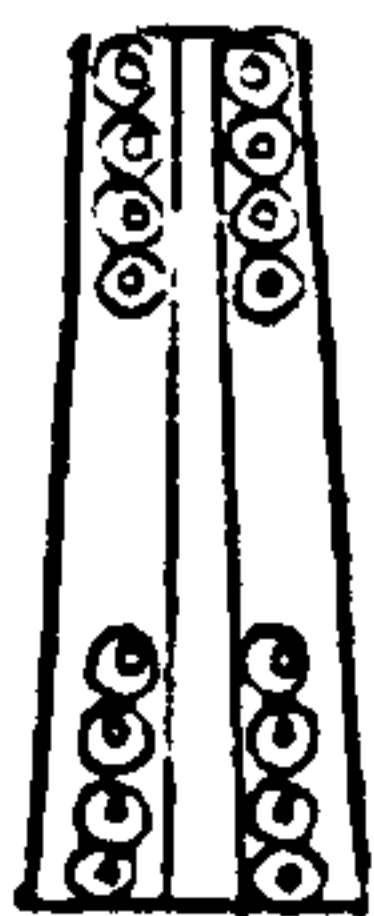
b8



b9



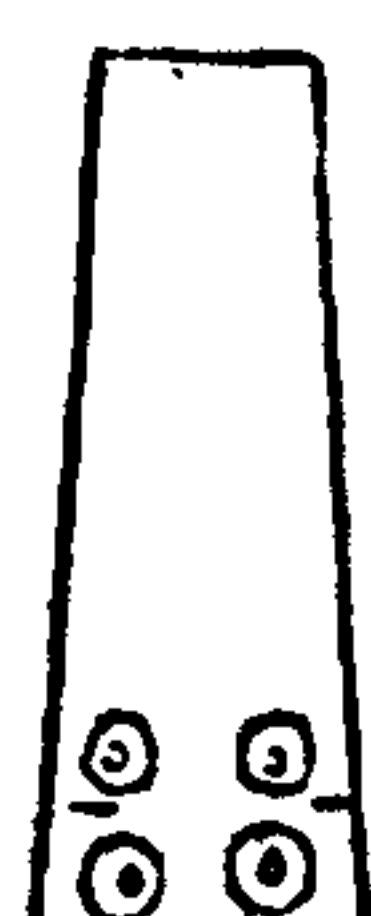
b10



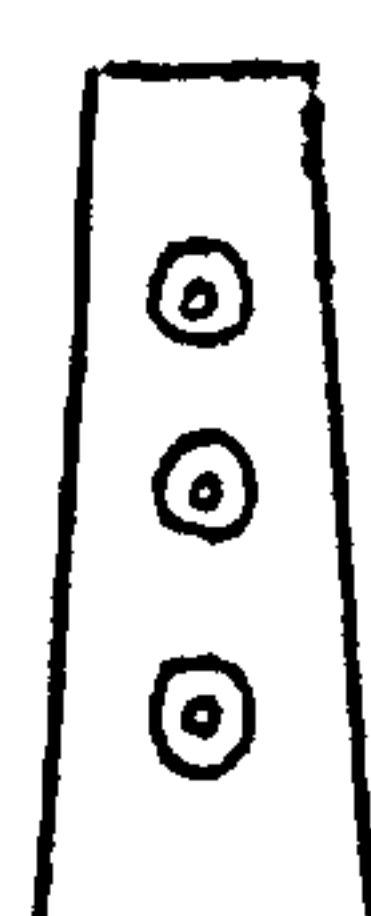
b12



b13



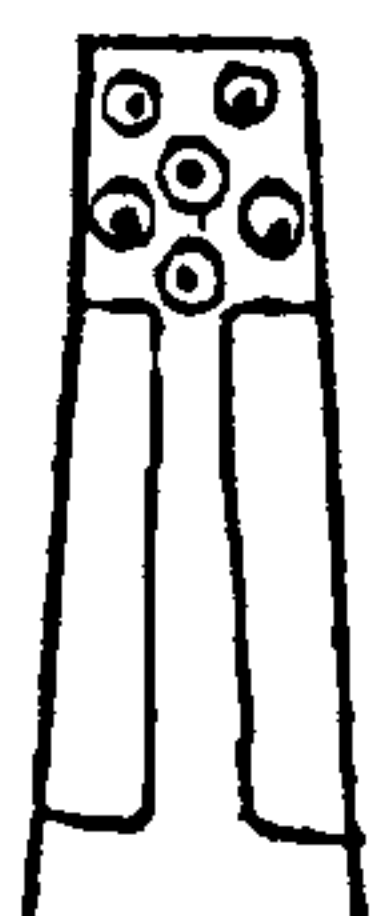
b15



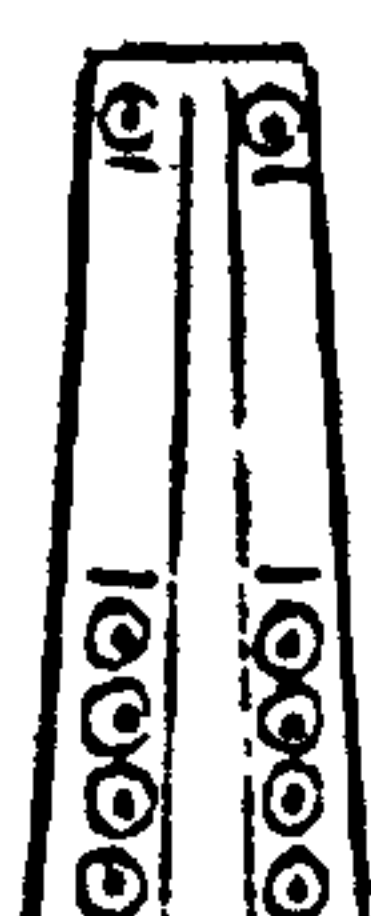
b16



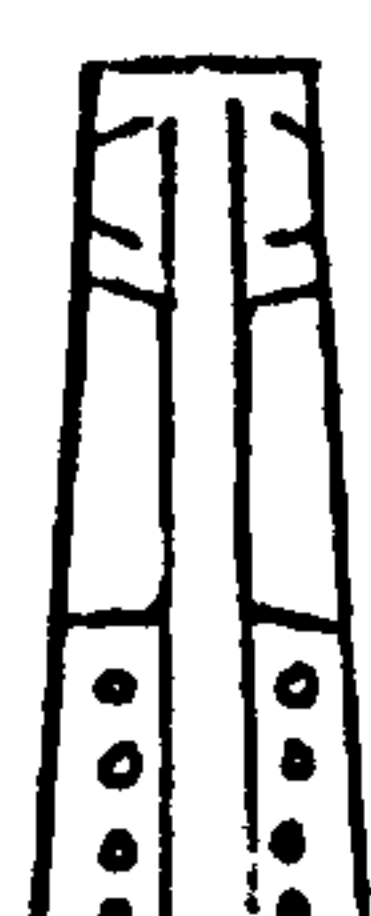
b17



b19



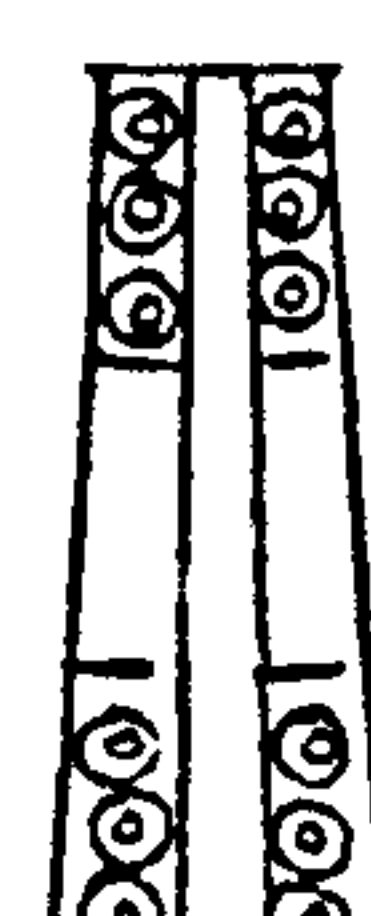
b20



b21



b23



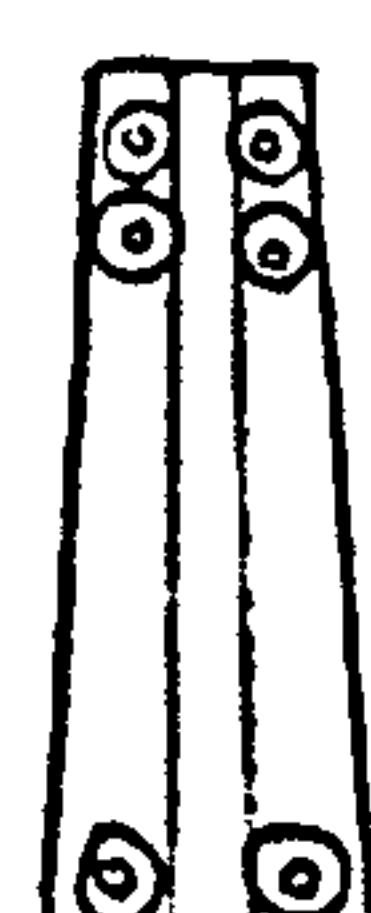
b24



b25



b26



b28

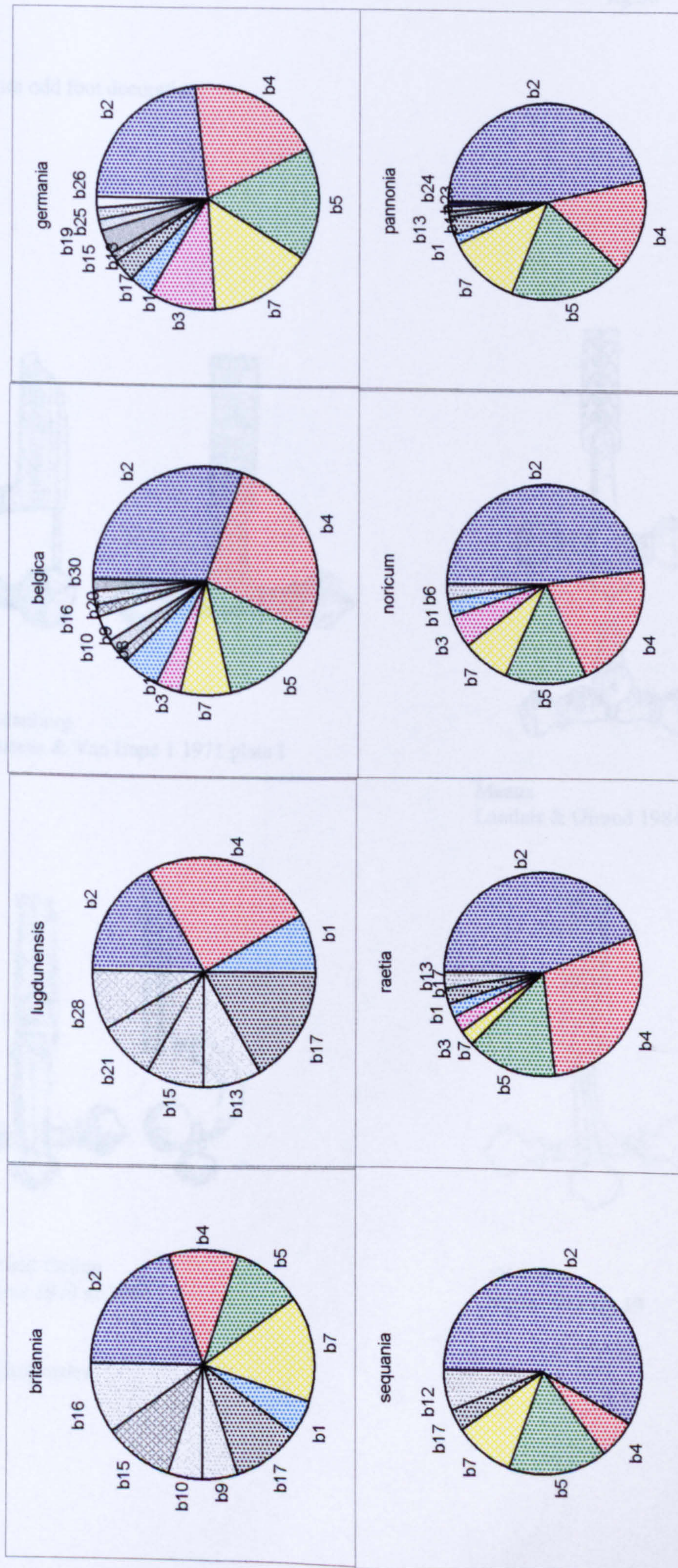


b30



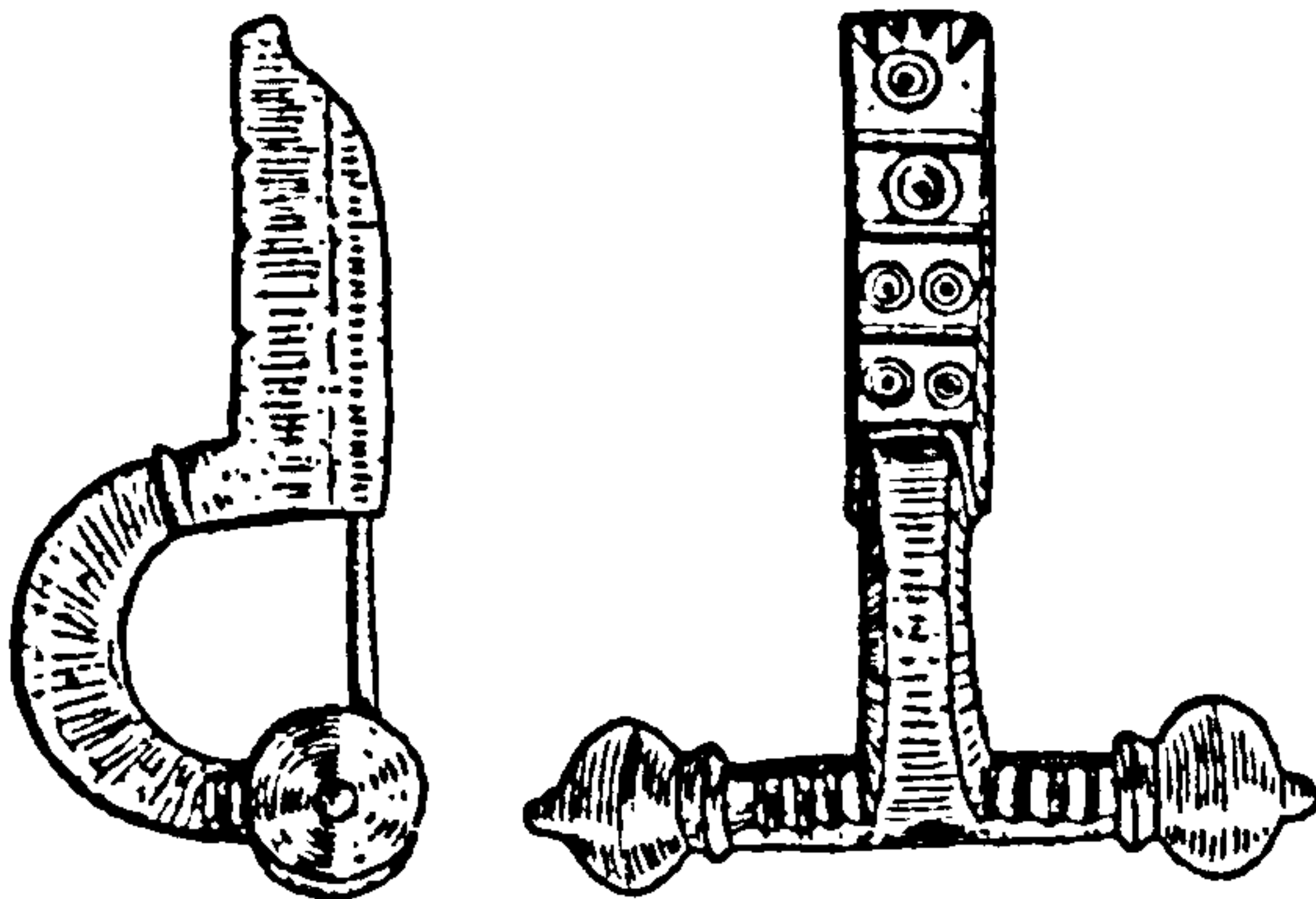
% of each circle and dot foot pattern by region

fig.49

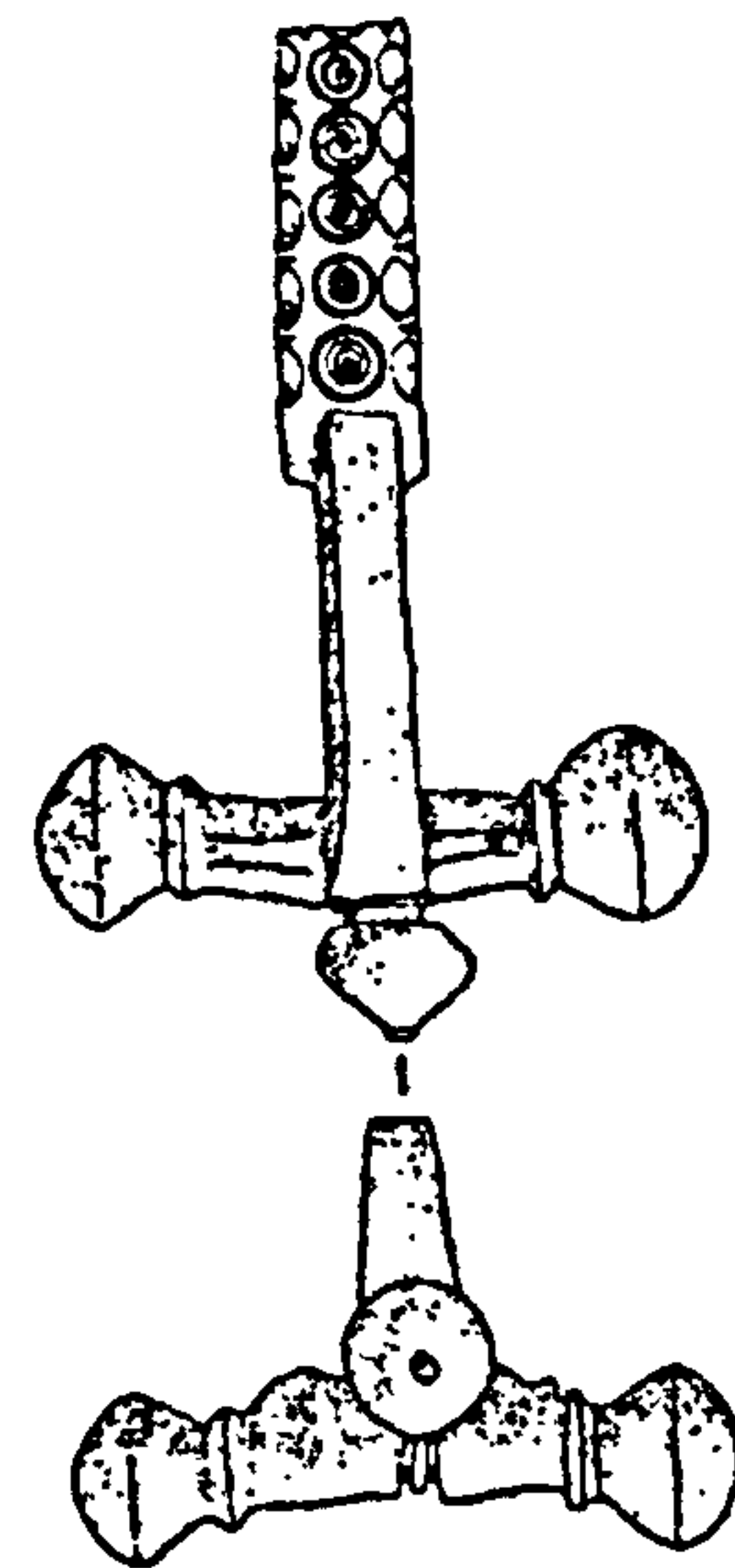




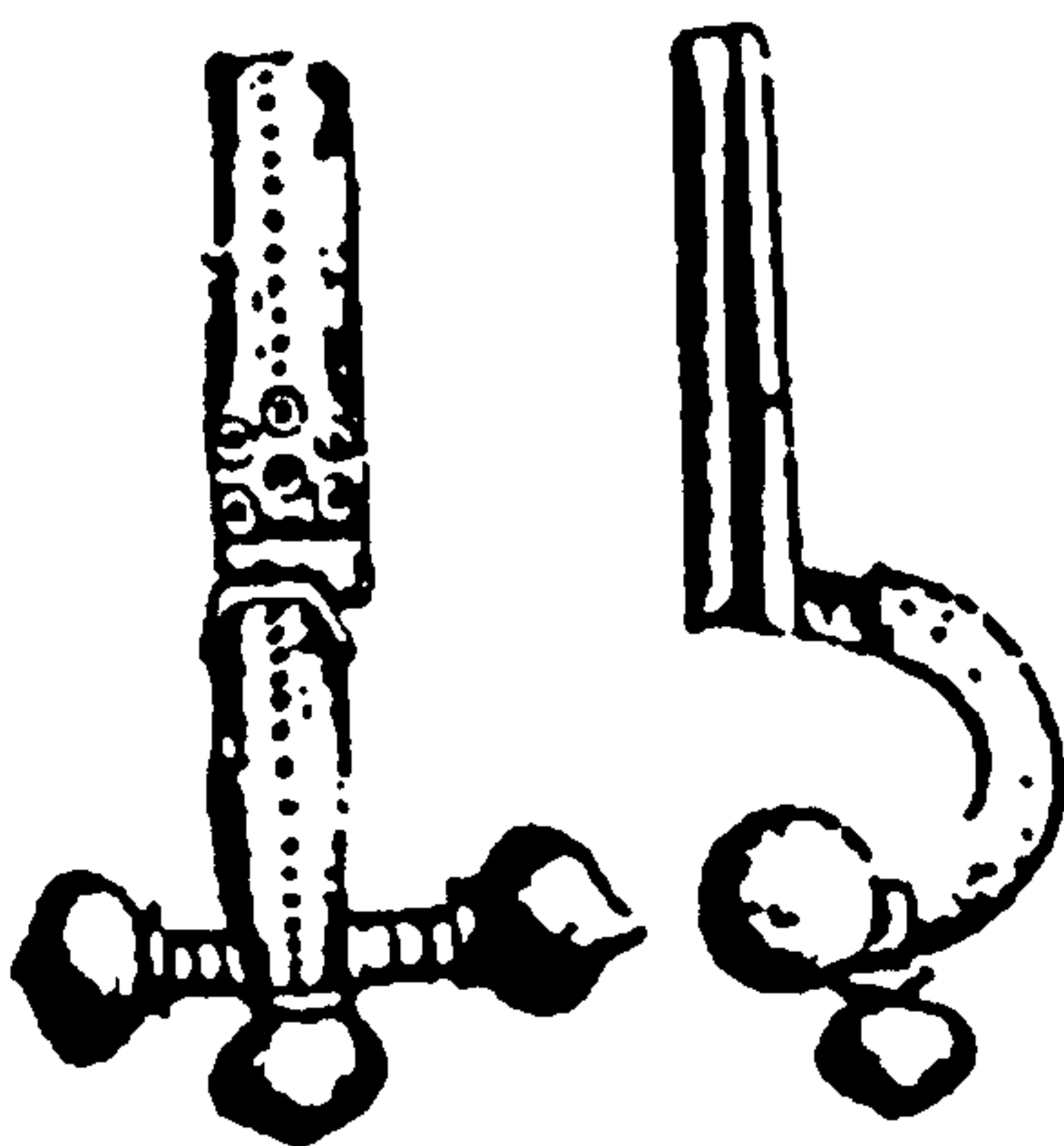
Type 3/4 with odd foot decoration



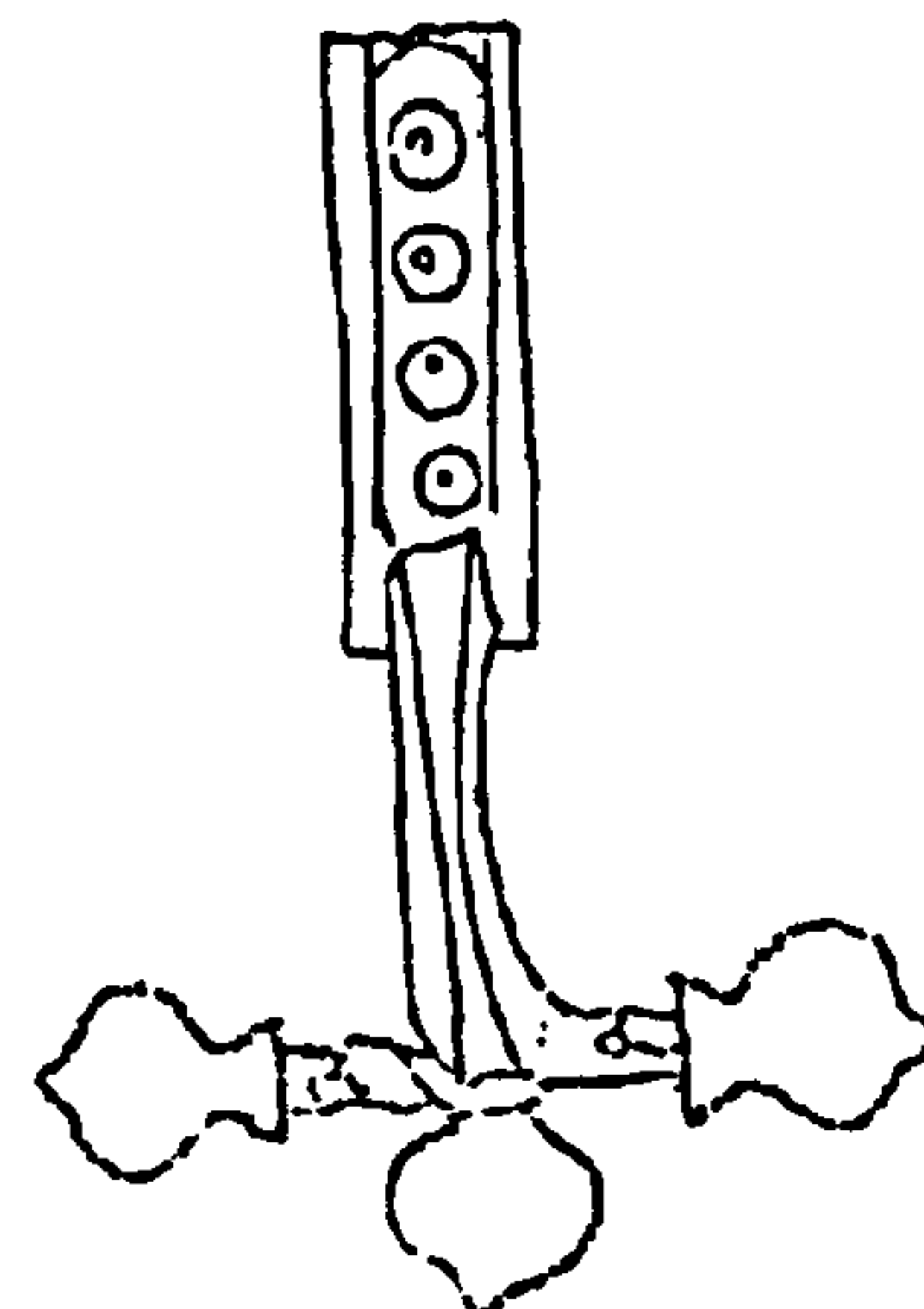
Oudenburg  
Mertens & Van Impe 1 1971 plate I



Meaux  
Landaïs & Giraud 1984 p 99



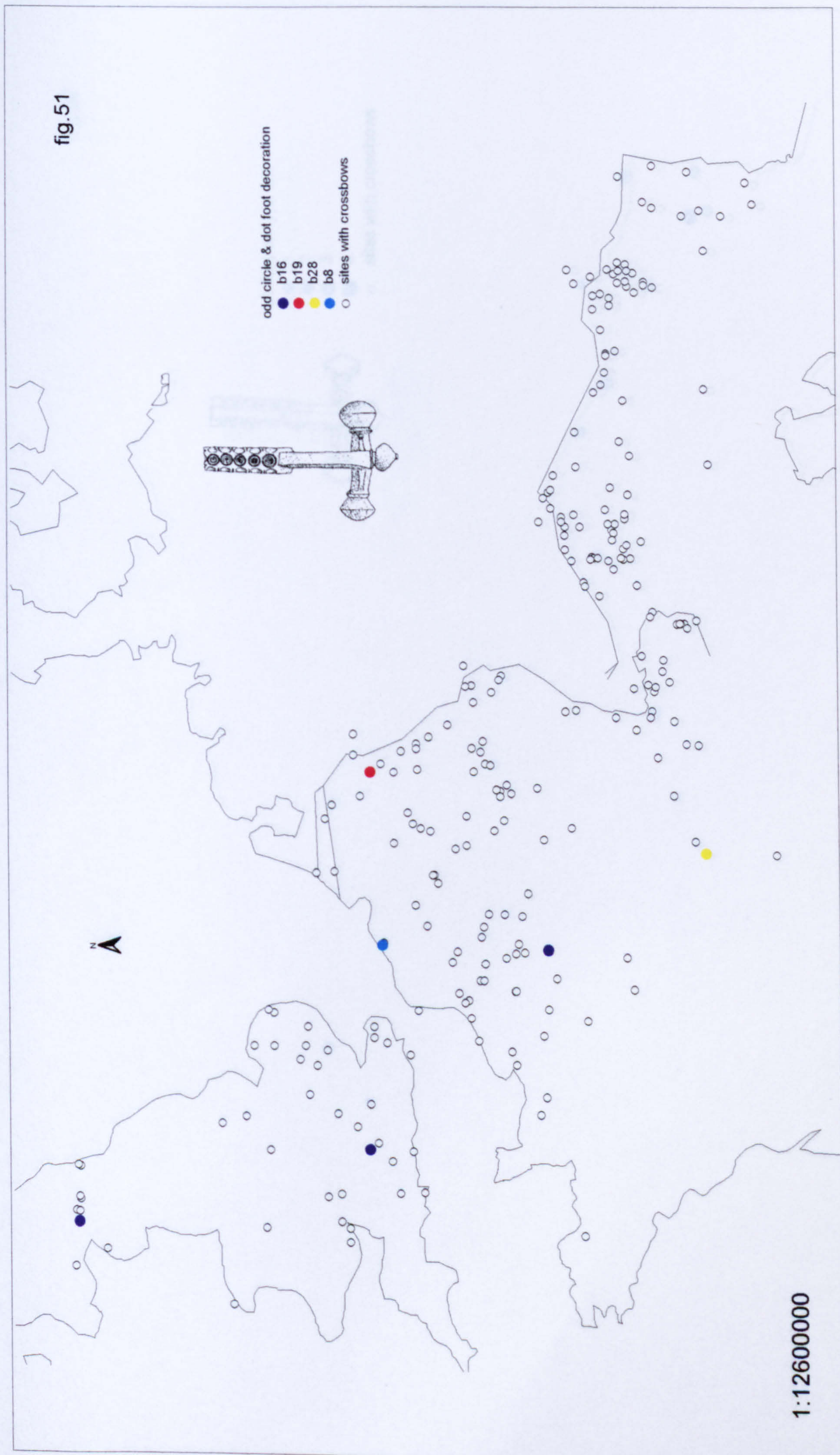
Krefeld-Gellep  
Pirling 1979 gr.2896



Silchester  
Boon 1974 fig.19

at varying scales







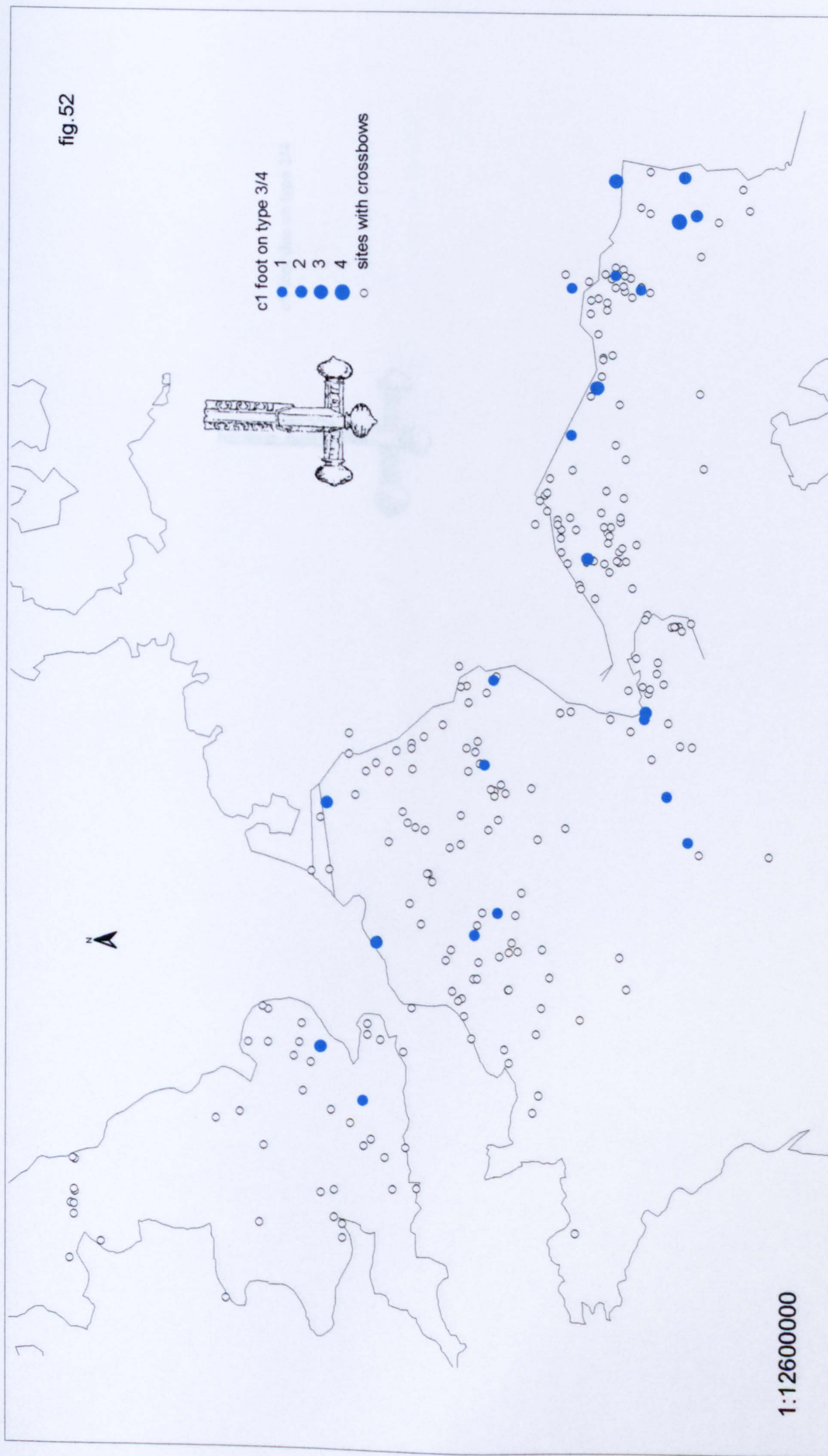


fig.52



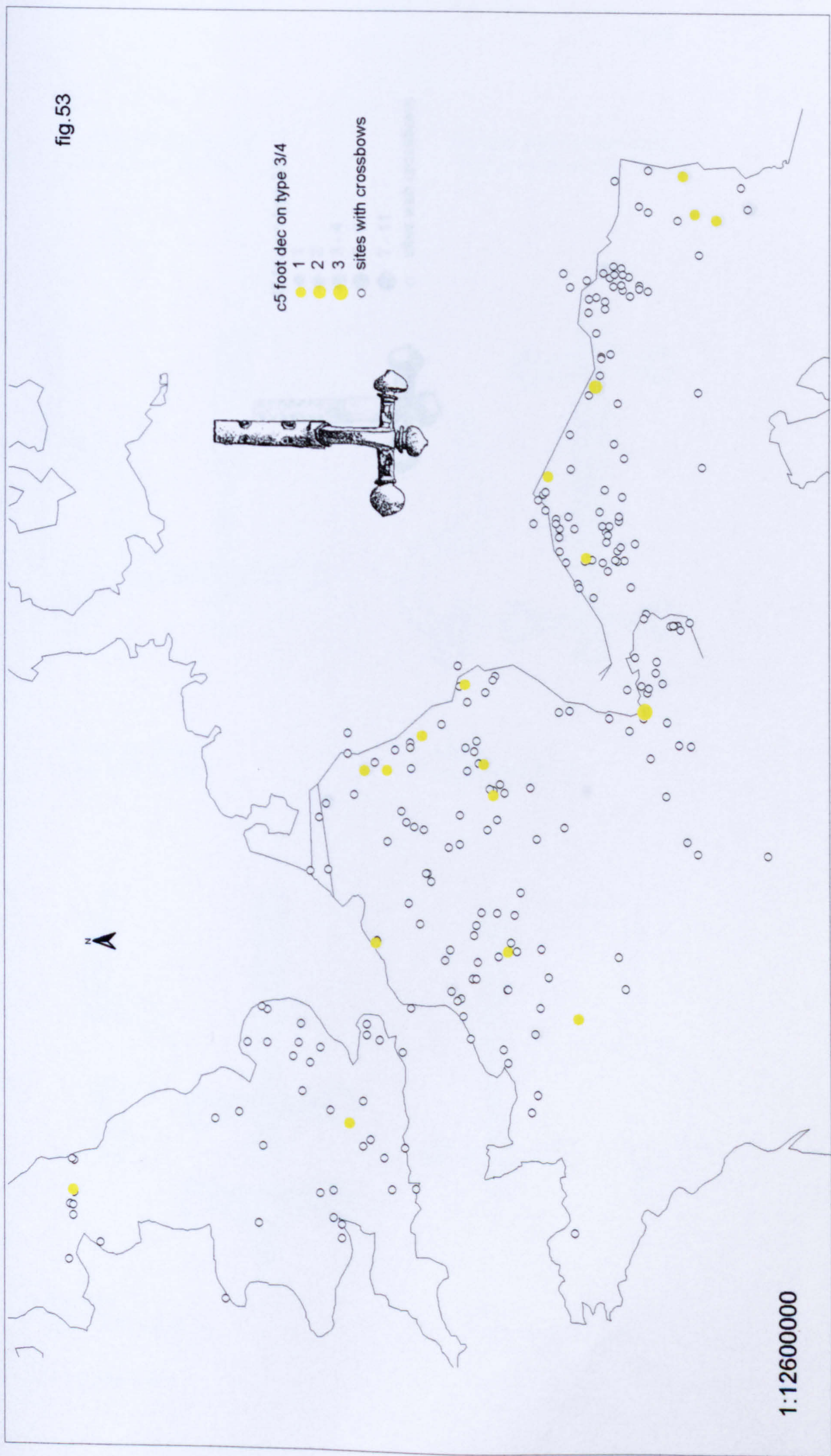
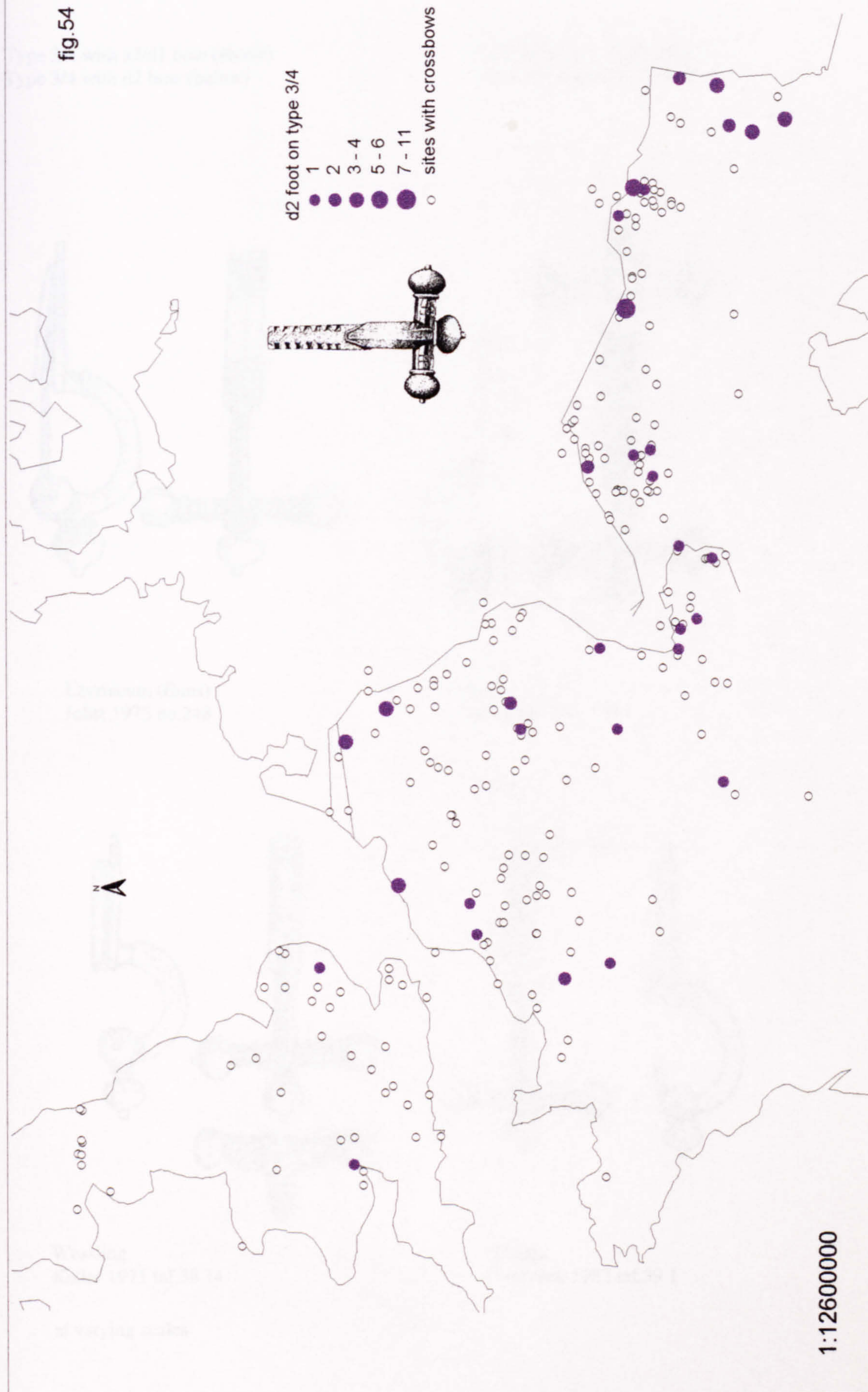


fig.53

1:12600000

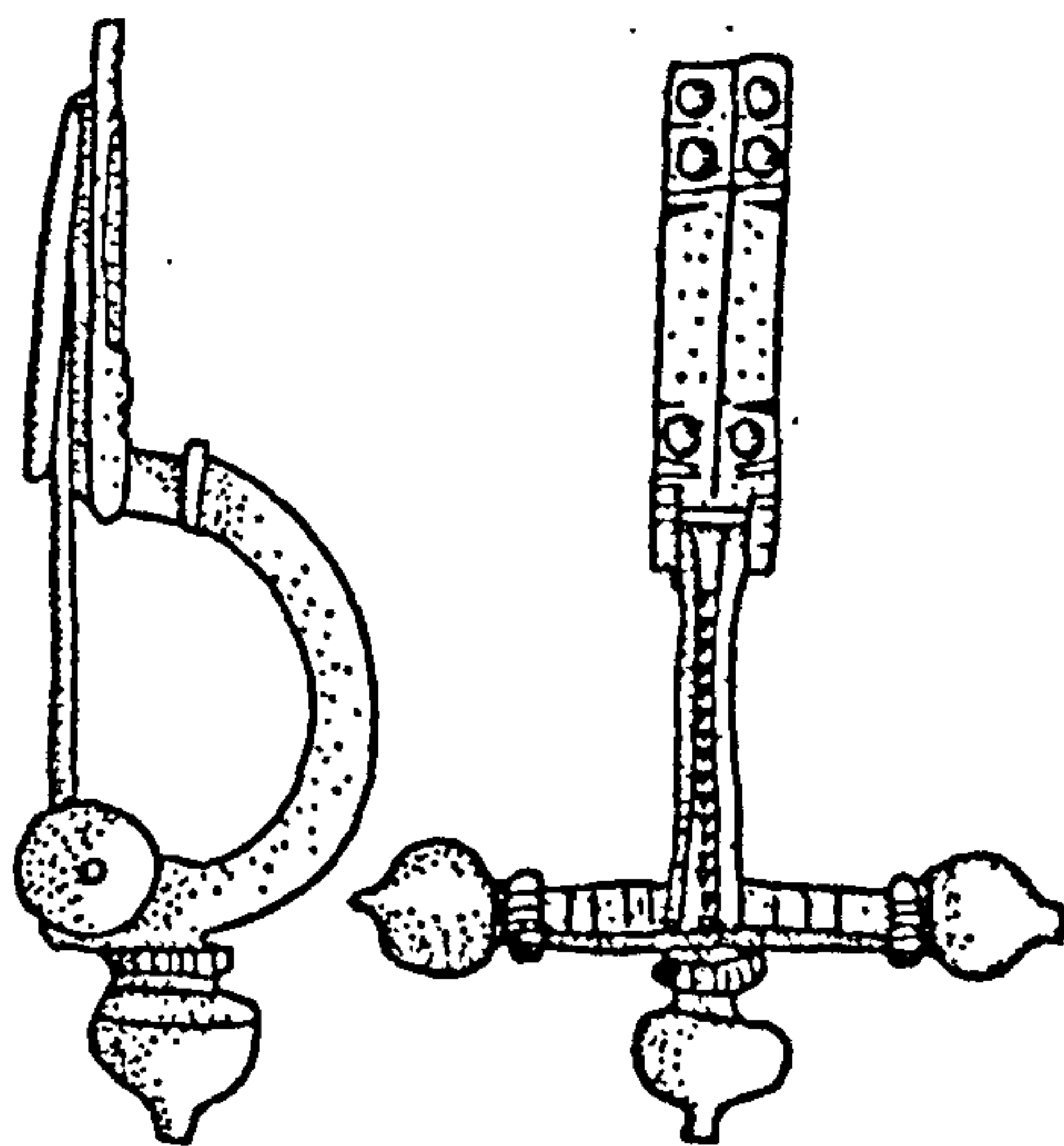


fig.54



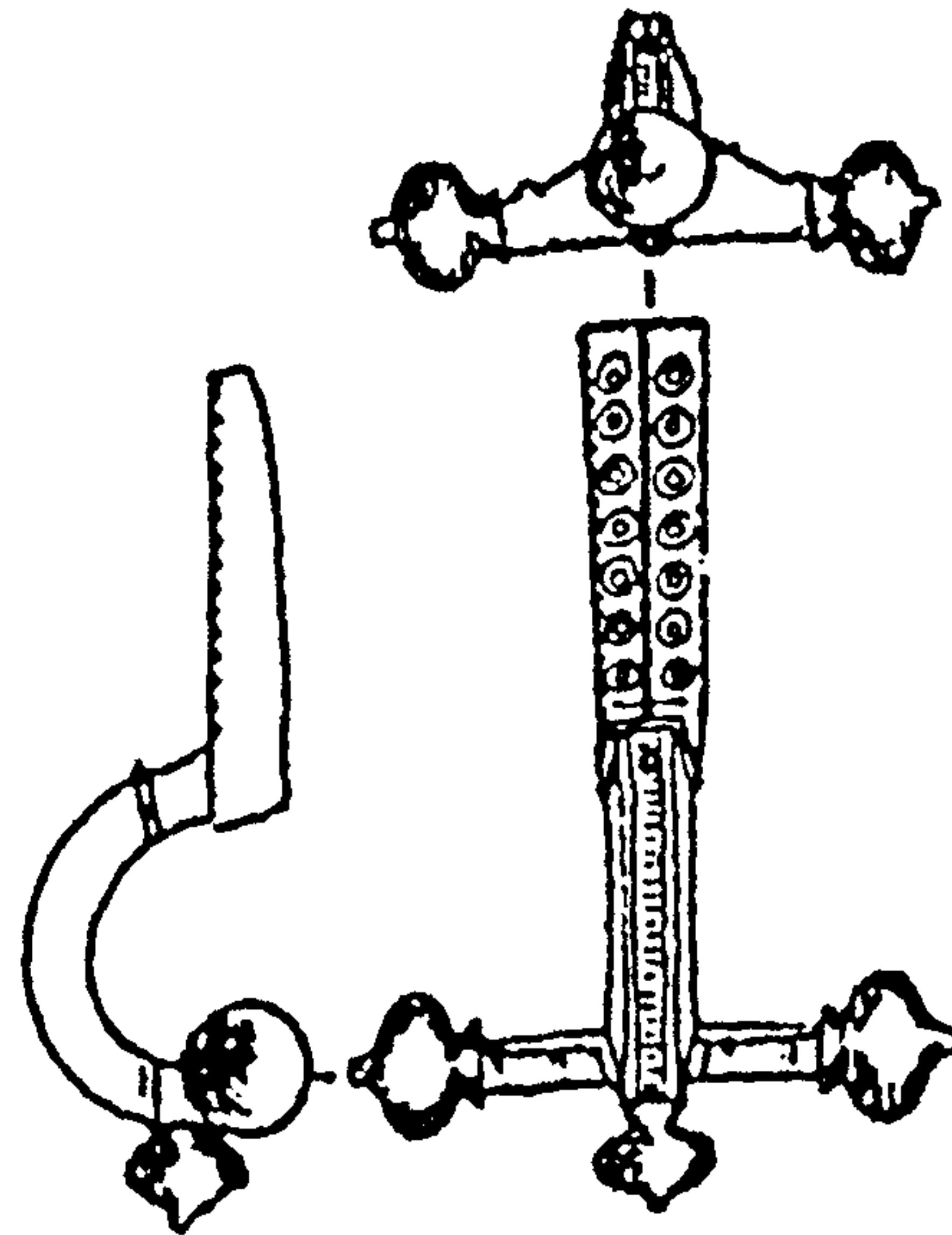


Type 3/4 with a2/d1 bow (above)  
Type 3/4 with d2 bow (below)

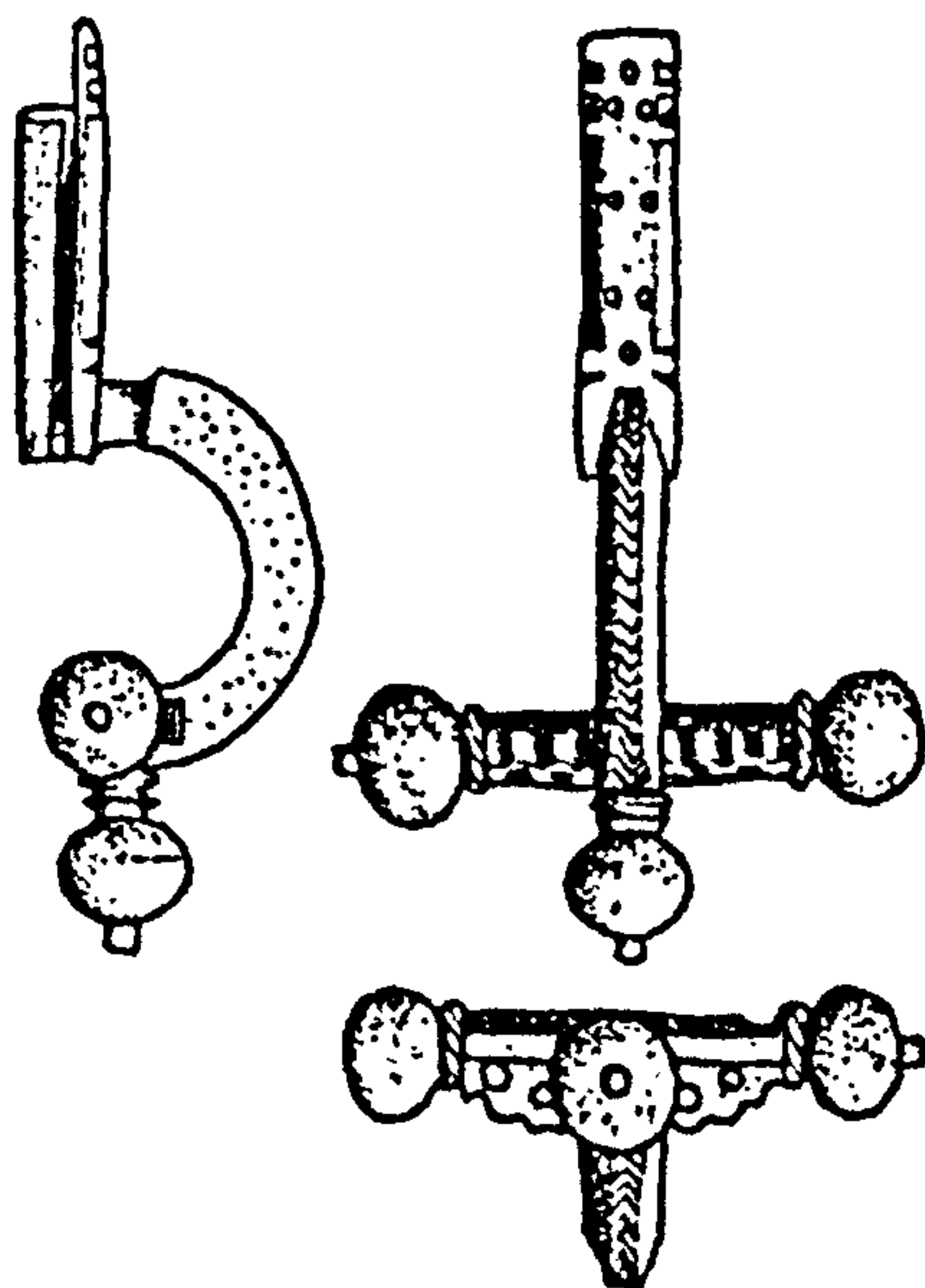


Lauriacum (Enns)  
Jobst 1975 no.248

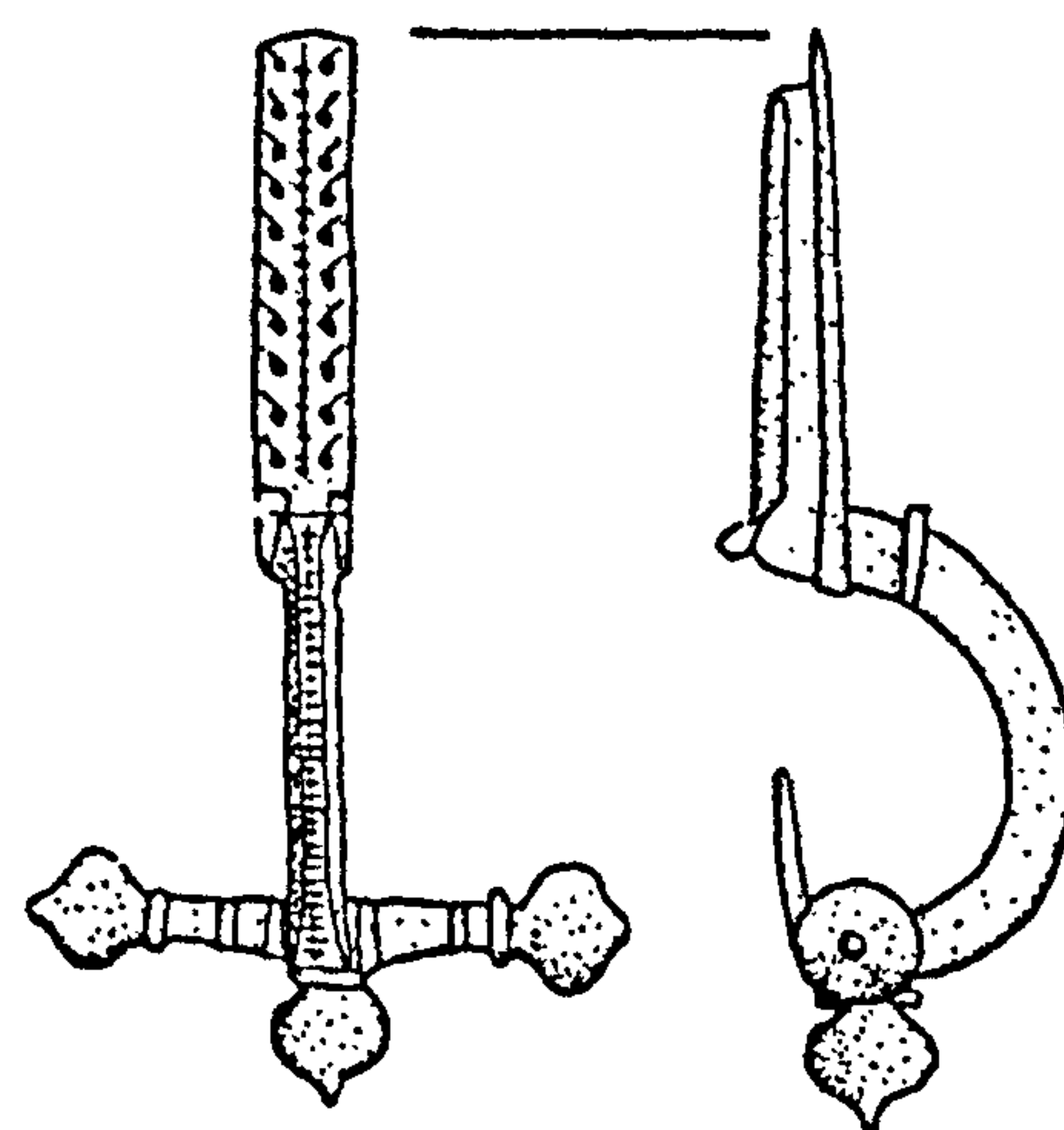
Type 3/4 with c1 bow (above)  
Type 3/4 with d0 bow (below)



Ságvar  
Burger 1966 fig.104



Wessling  
Keller 1971 taf.38 14



Triesen  
Overbeck 1982 taf.39 1

at varying scales







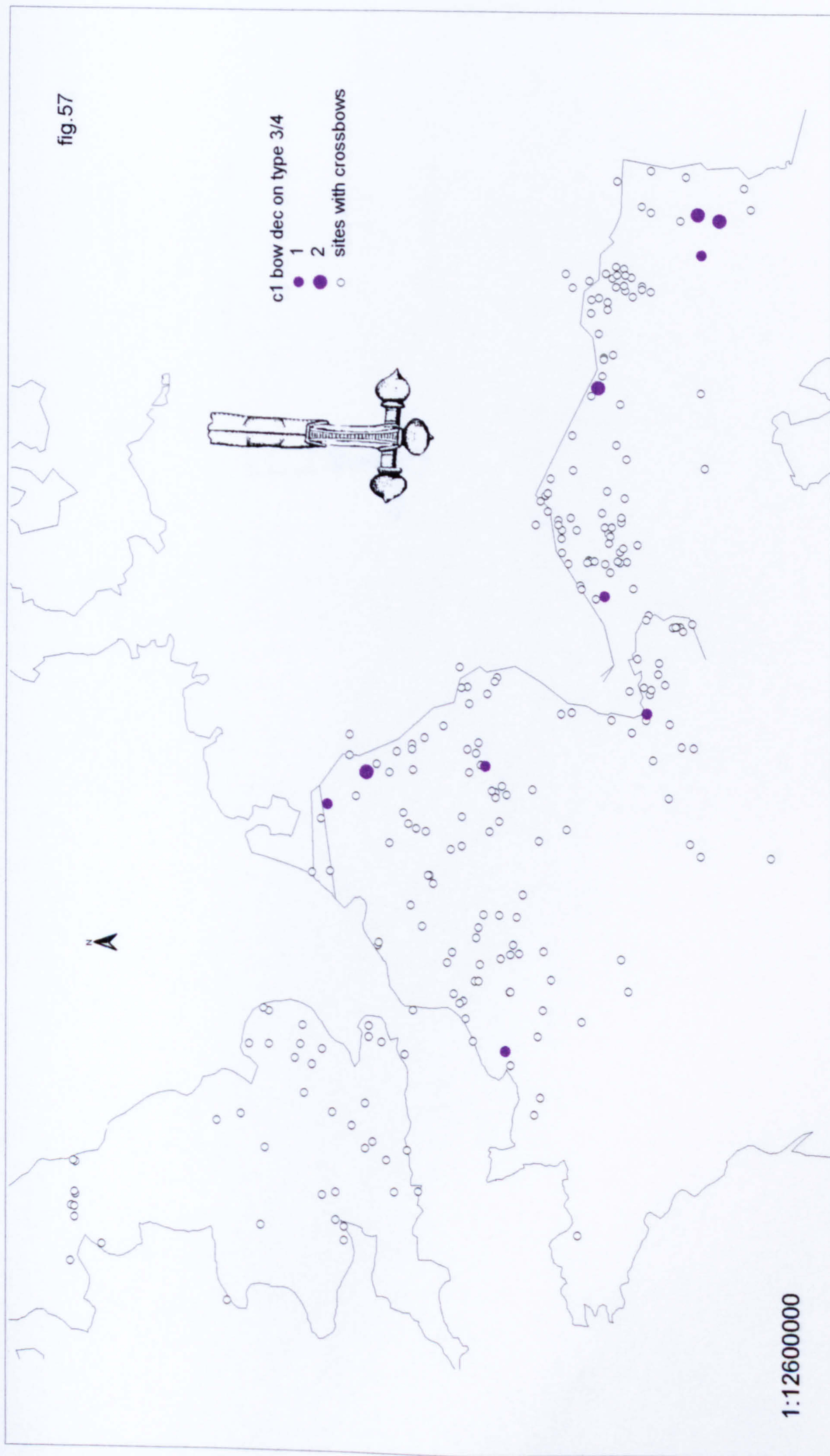






fig.58



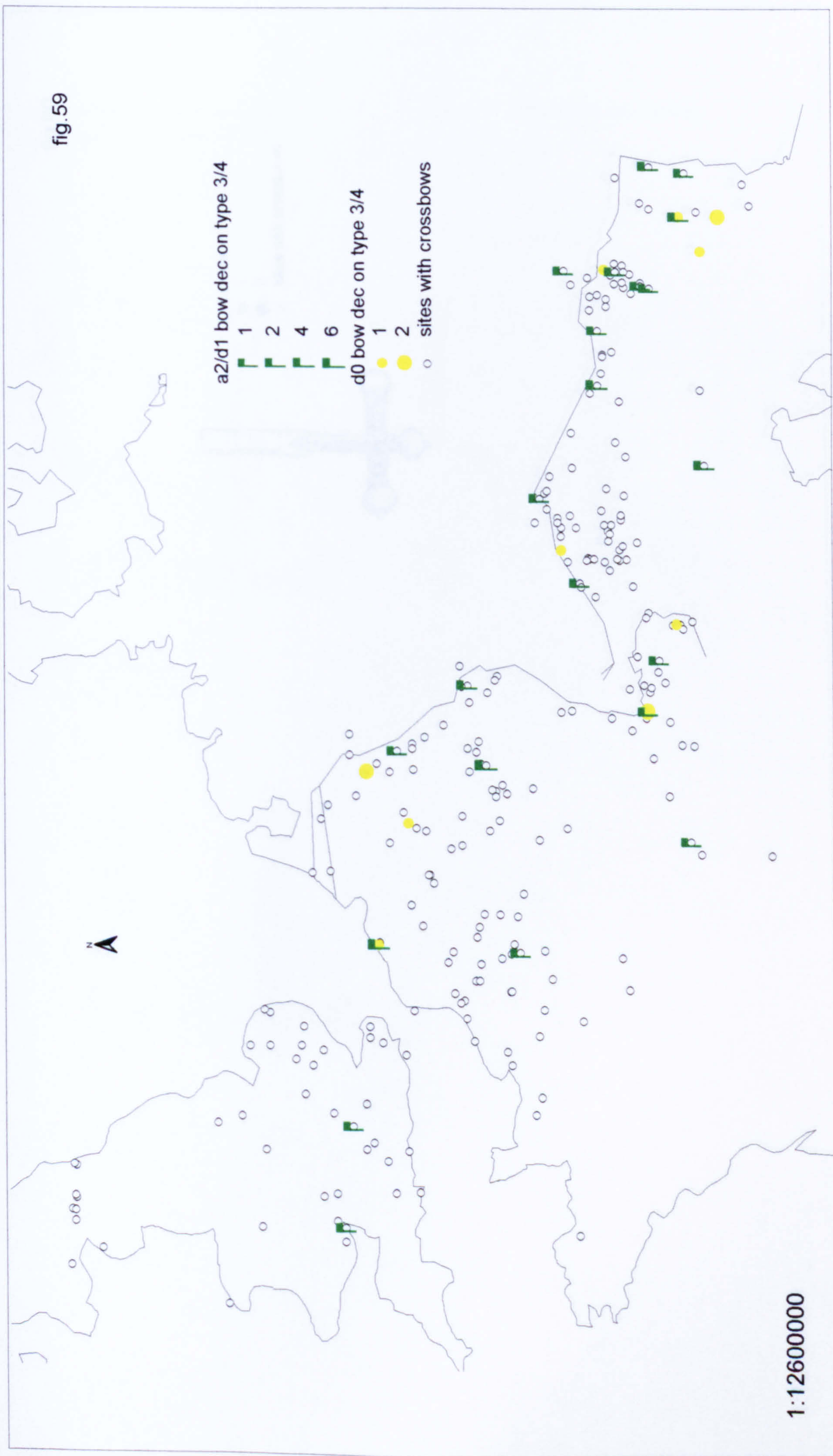
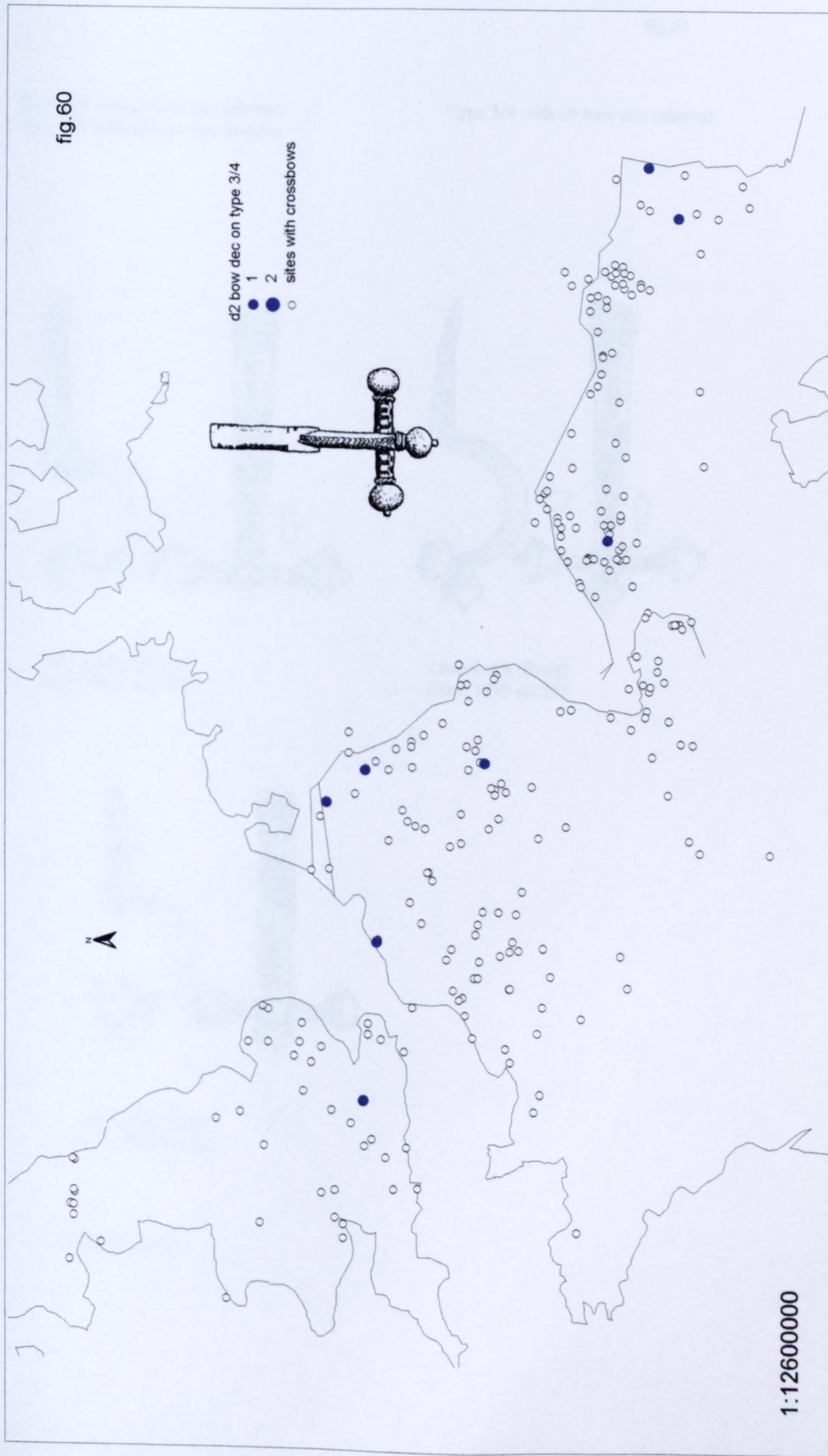


fig.59

1:12600000

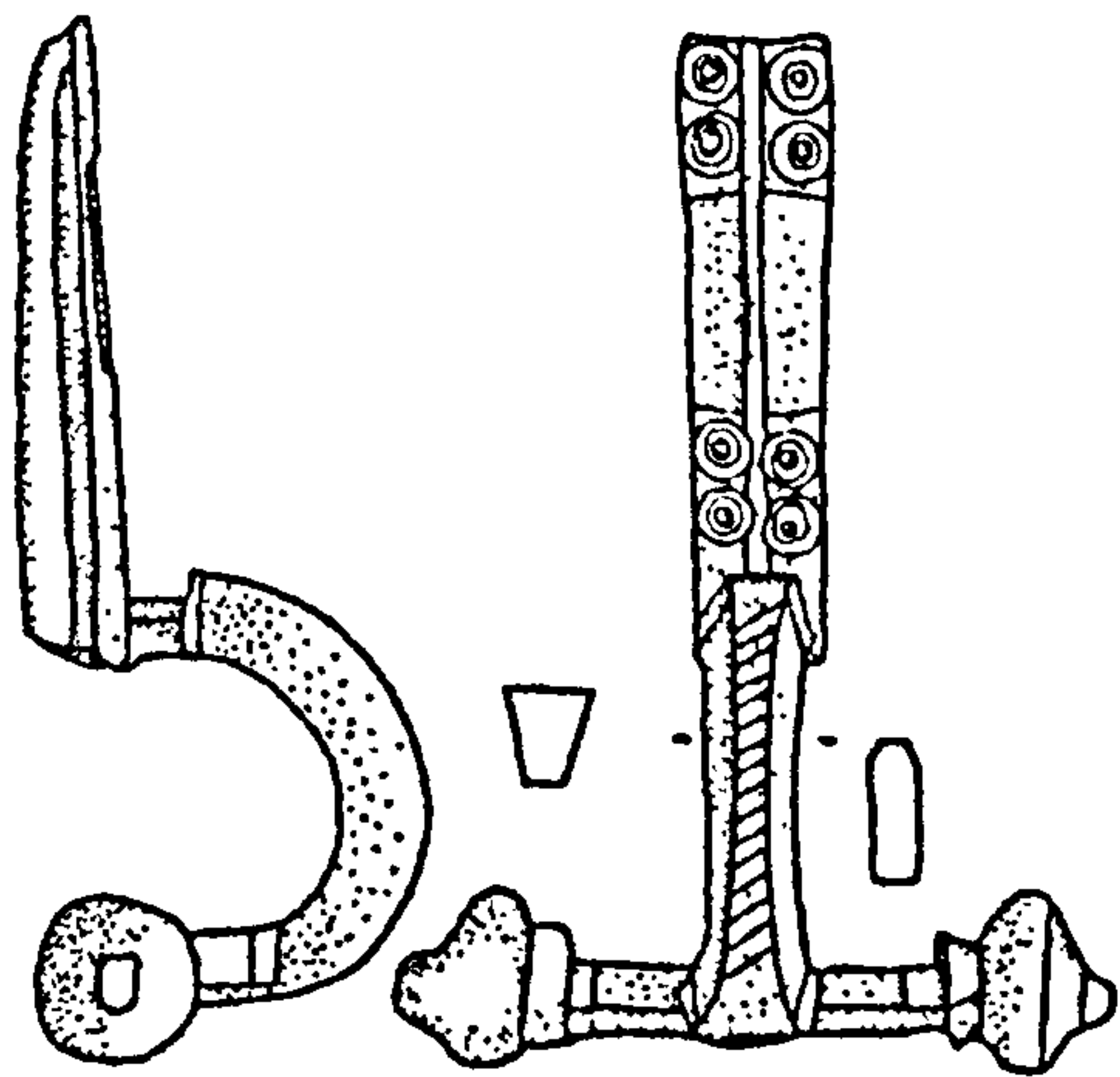




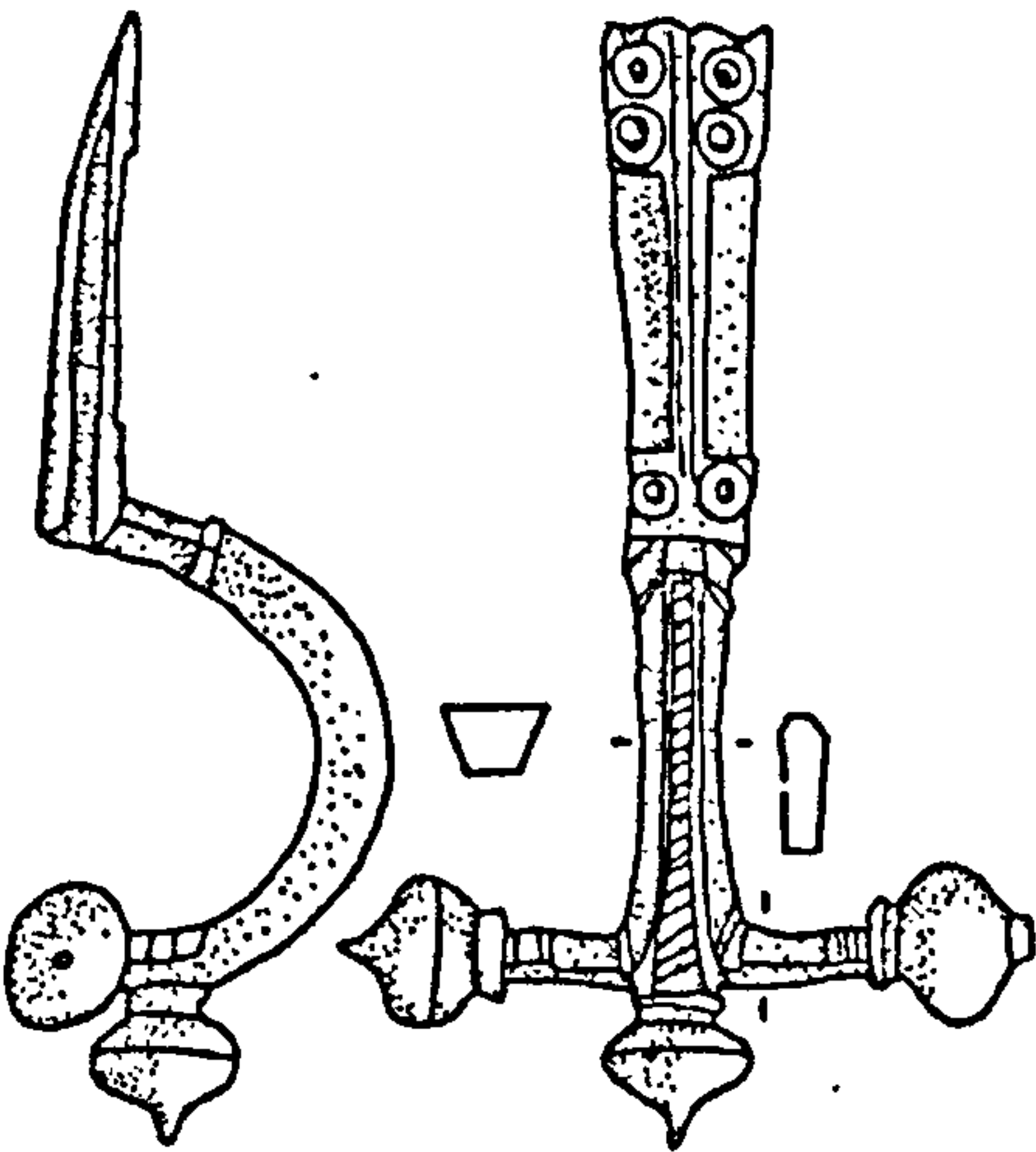


Type 3/4 with e1 bow dec (above)  
Type 3/4 with e6 bow dec (below)

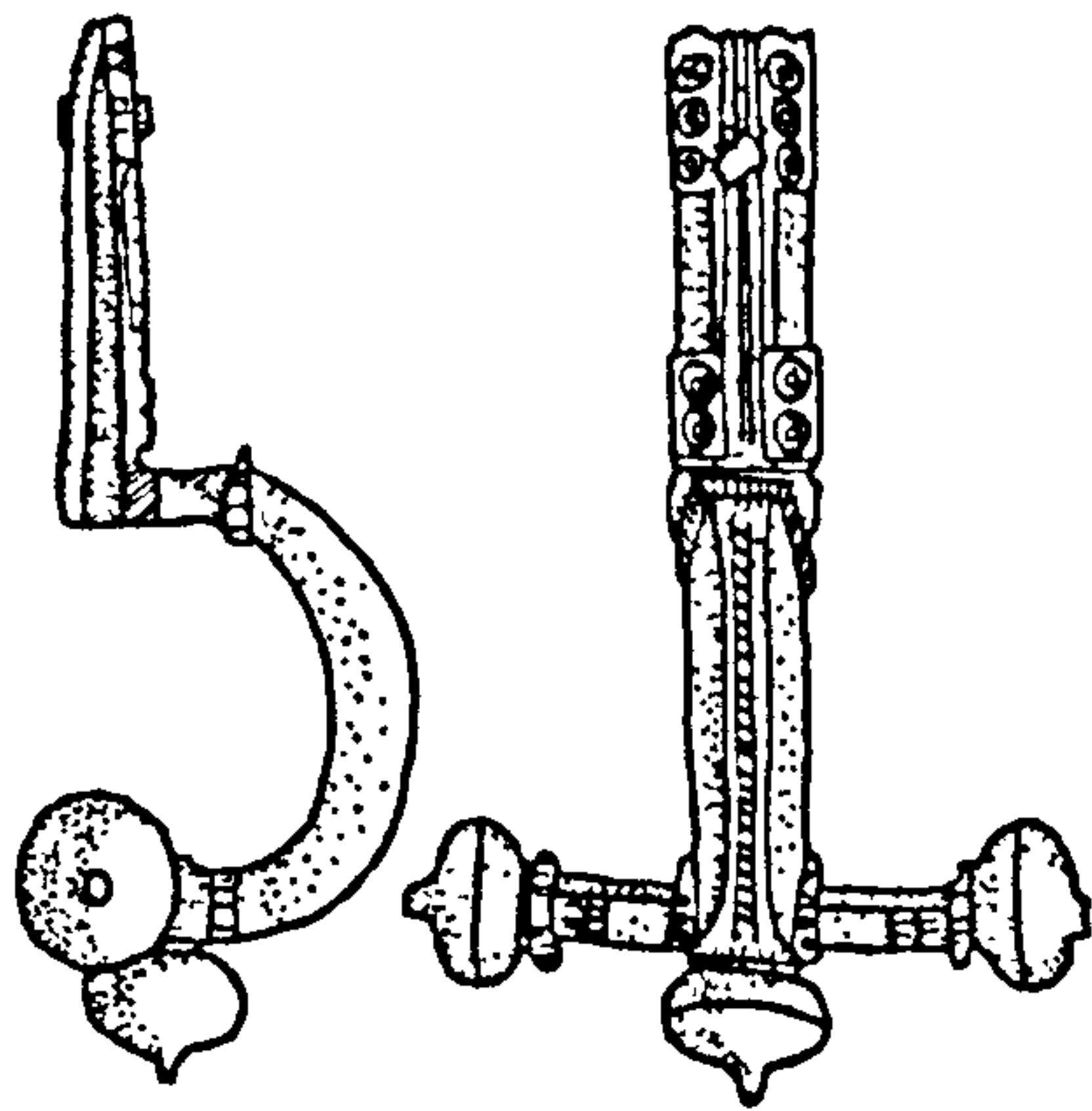
Type 3/4 with e9 bow dec (above)



Lauriacum (Enns)  
Jobst 1975 no.258



Lauriacum (Enns)  
Jobst 1975 no.257



Lauriacum (Enns)  
Jobst 1975 no.268

N

at varying scales



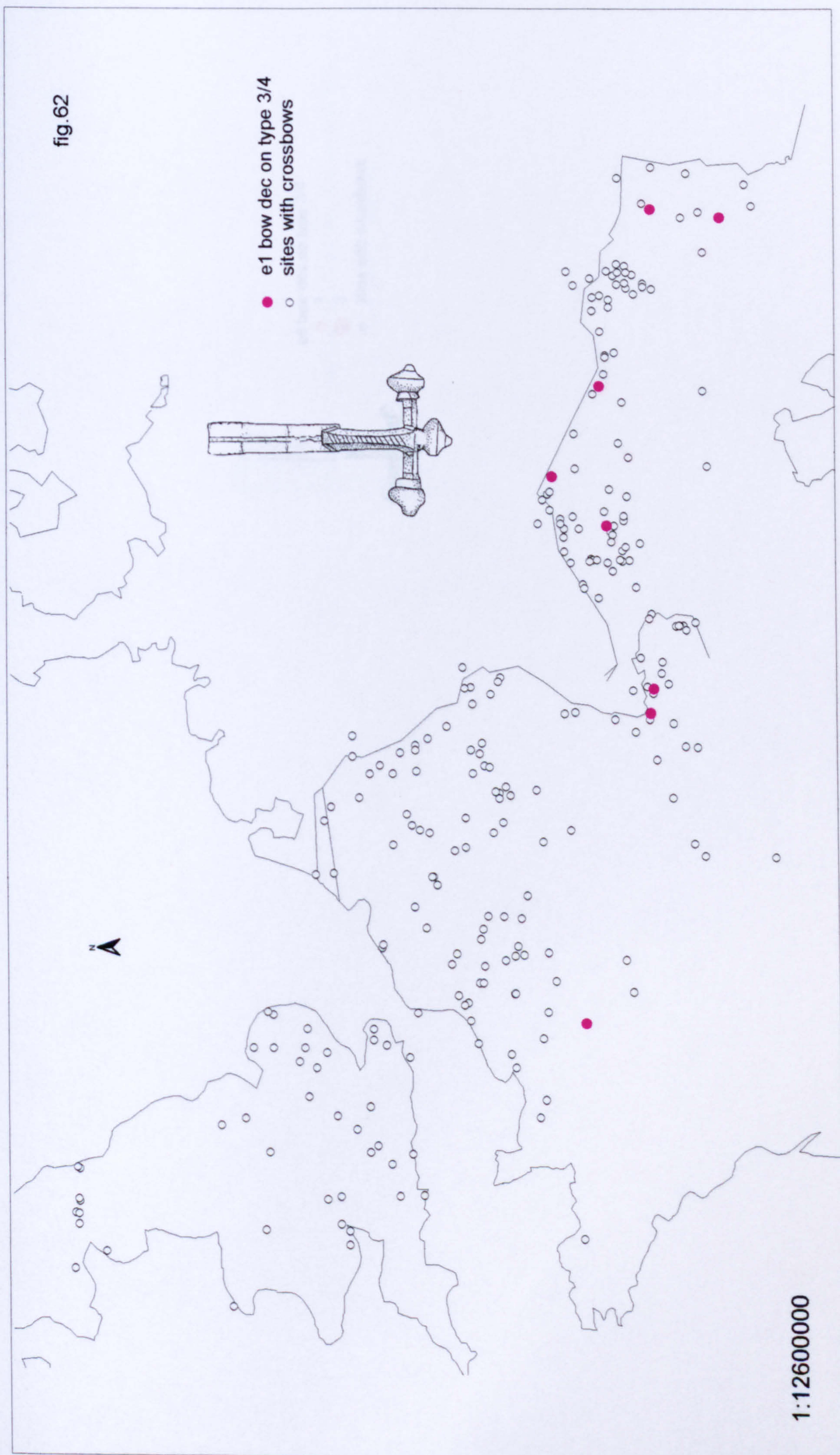


fig.62

● e1 bow dec on type 3/4  
○ sites with crossbows

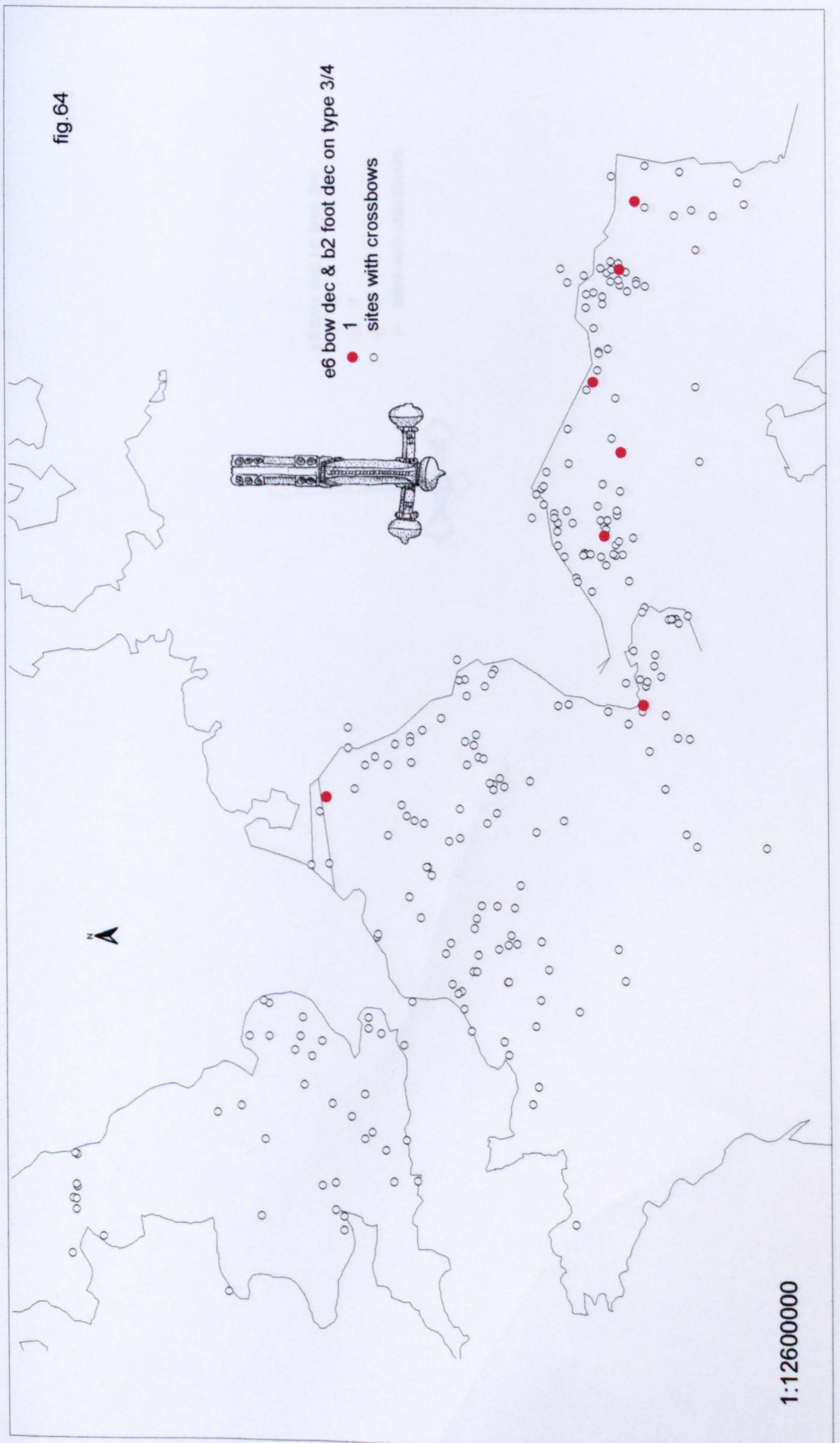
1:12600000





fig.63







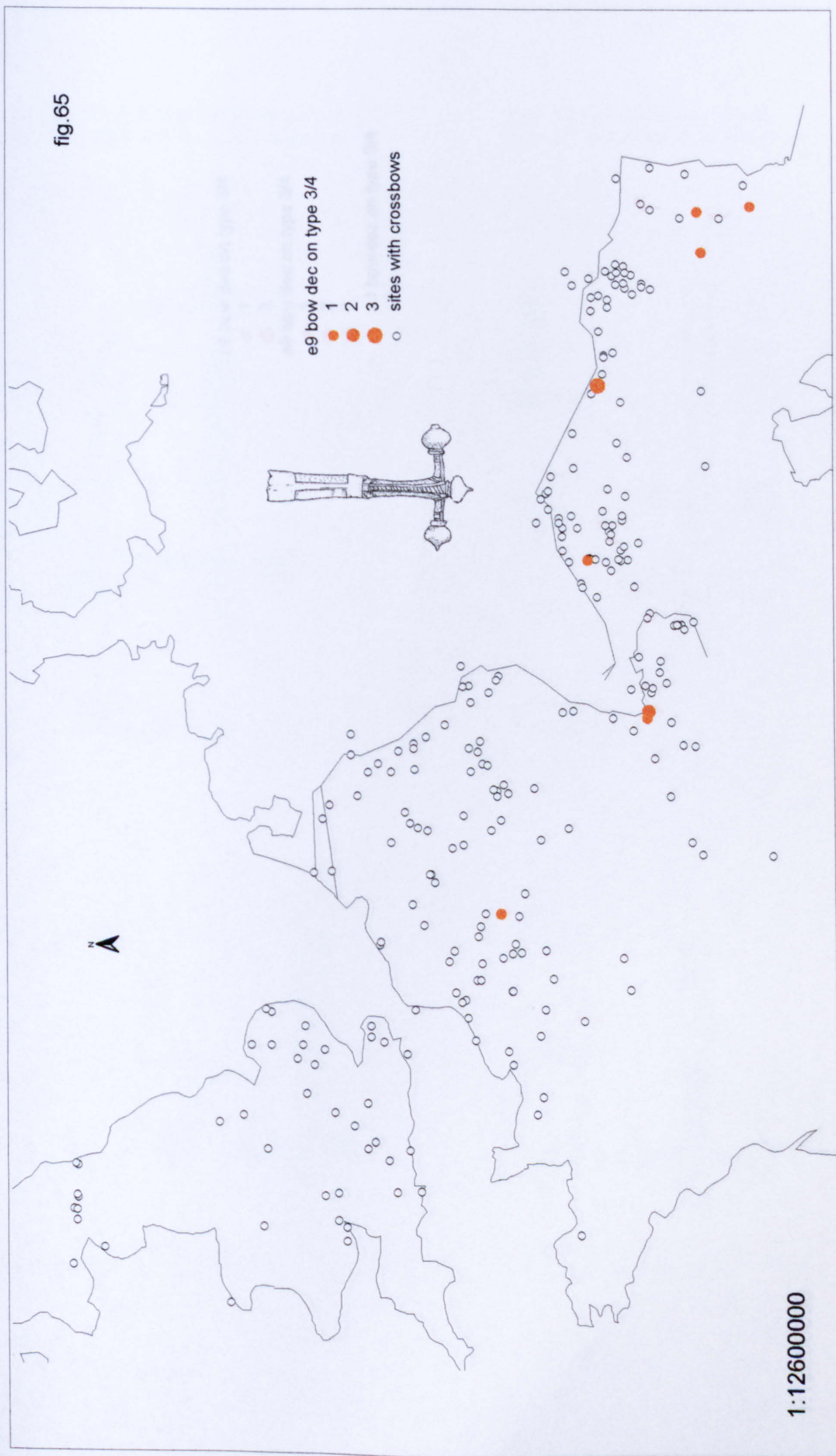
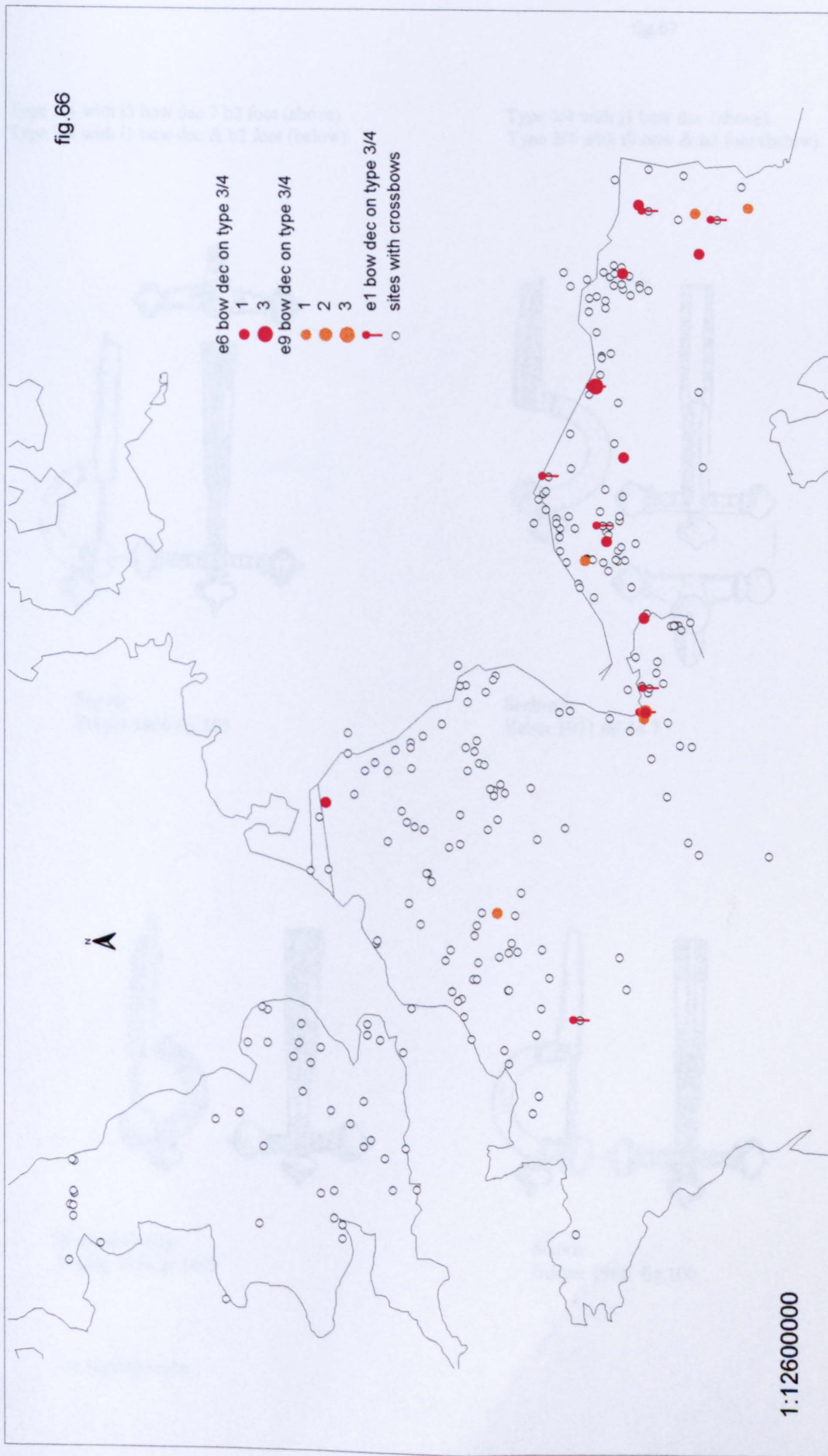


fig.65

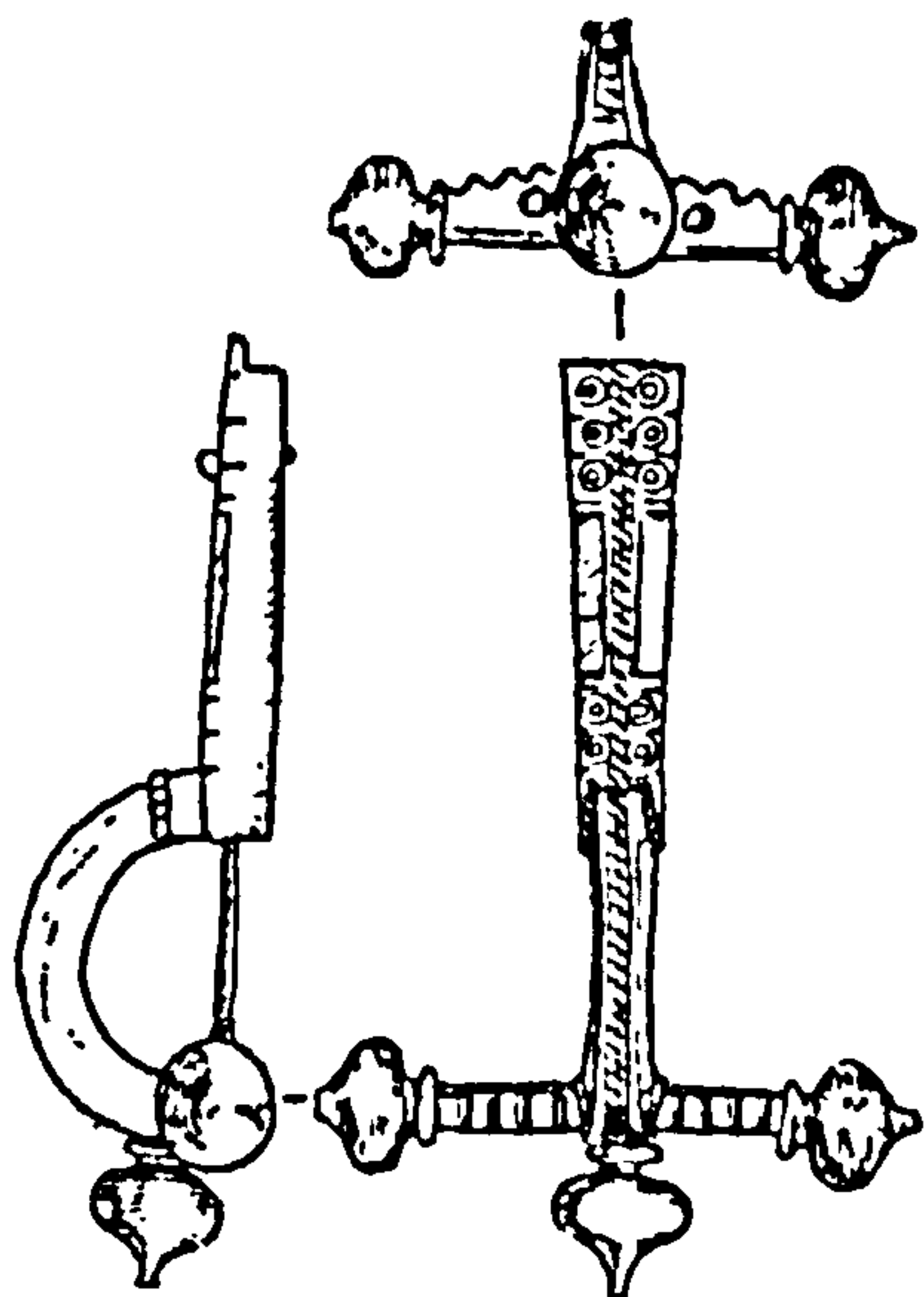
1:12600000





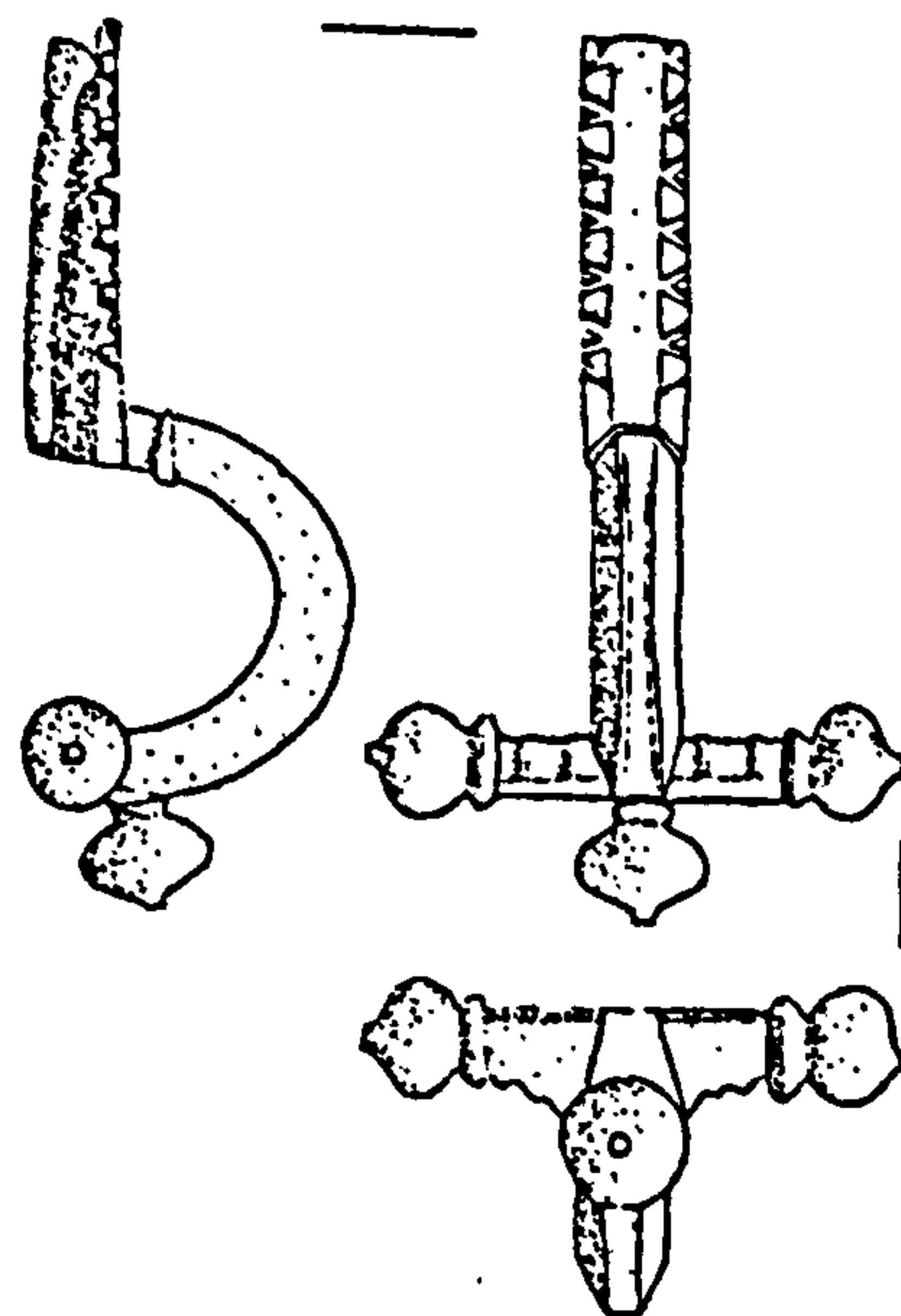


Type 3/4 with i5 bow dec 7 b2 foot (above)  
Type 3/4 with i1 bow dec & b2 foot (below)

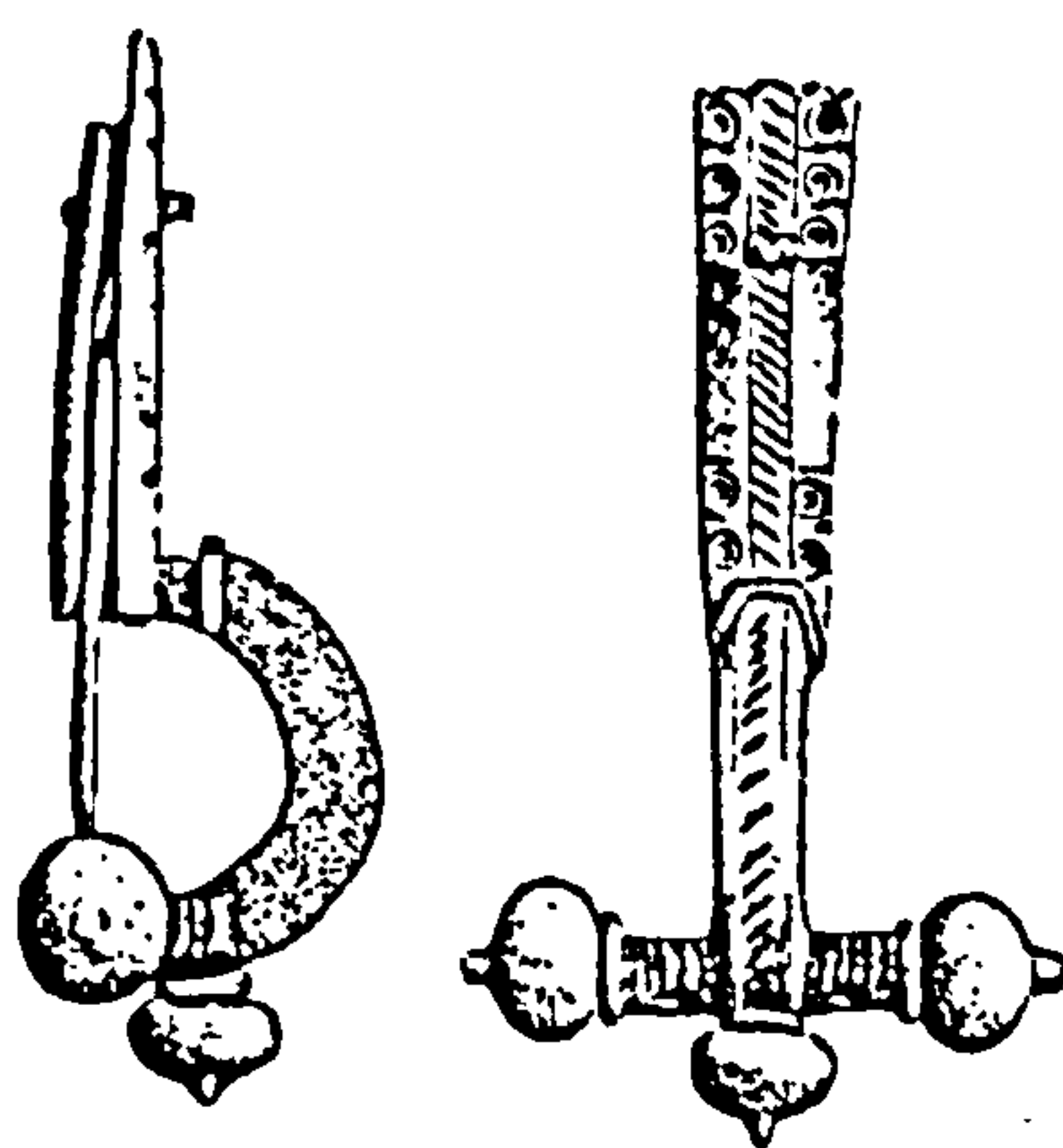


Ságvár  
Burger 1966 fig.105

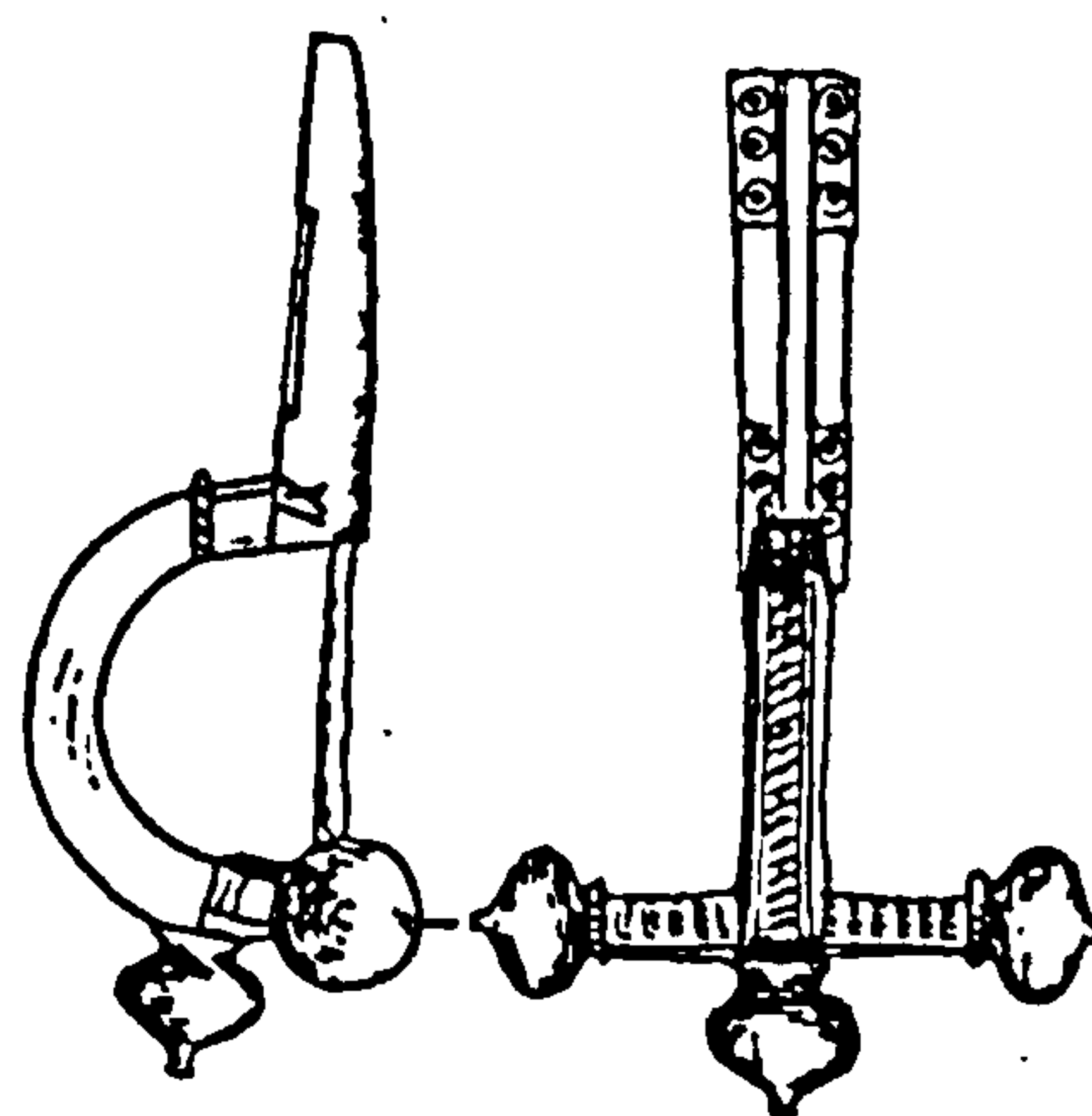
Type 3/4 with j1 bow dec (above)  
Type 3/4 with i9 bow & b2 foot (below)



Seebruck  
Keller 1971 taf.44 7



Krefeld-Gellep  
Pirling 1974 gr.1493



Ságvár  
Burger 1966 fig.100

at varying scales



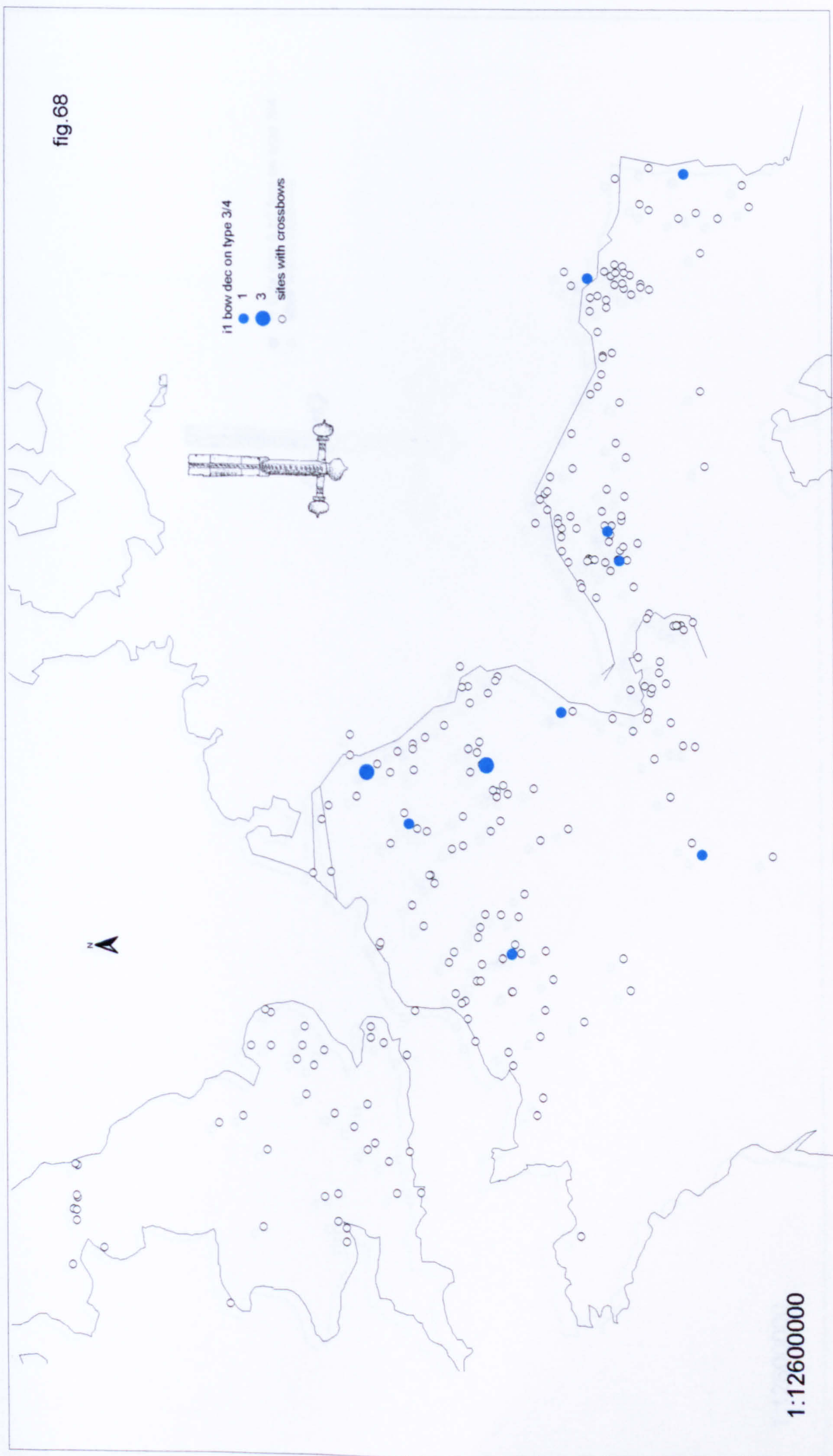


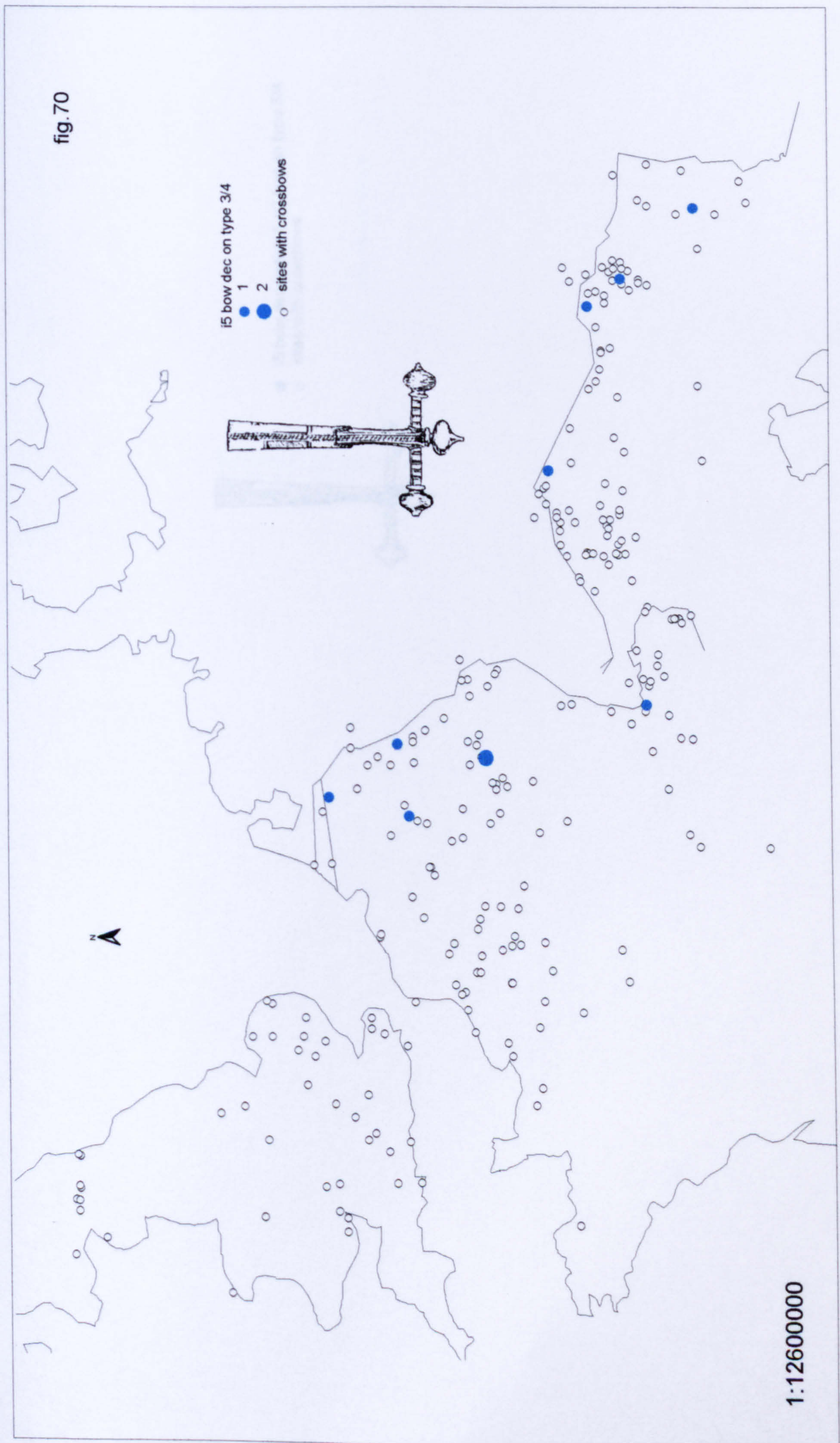
fig.68

1:12600000











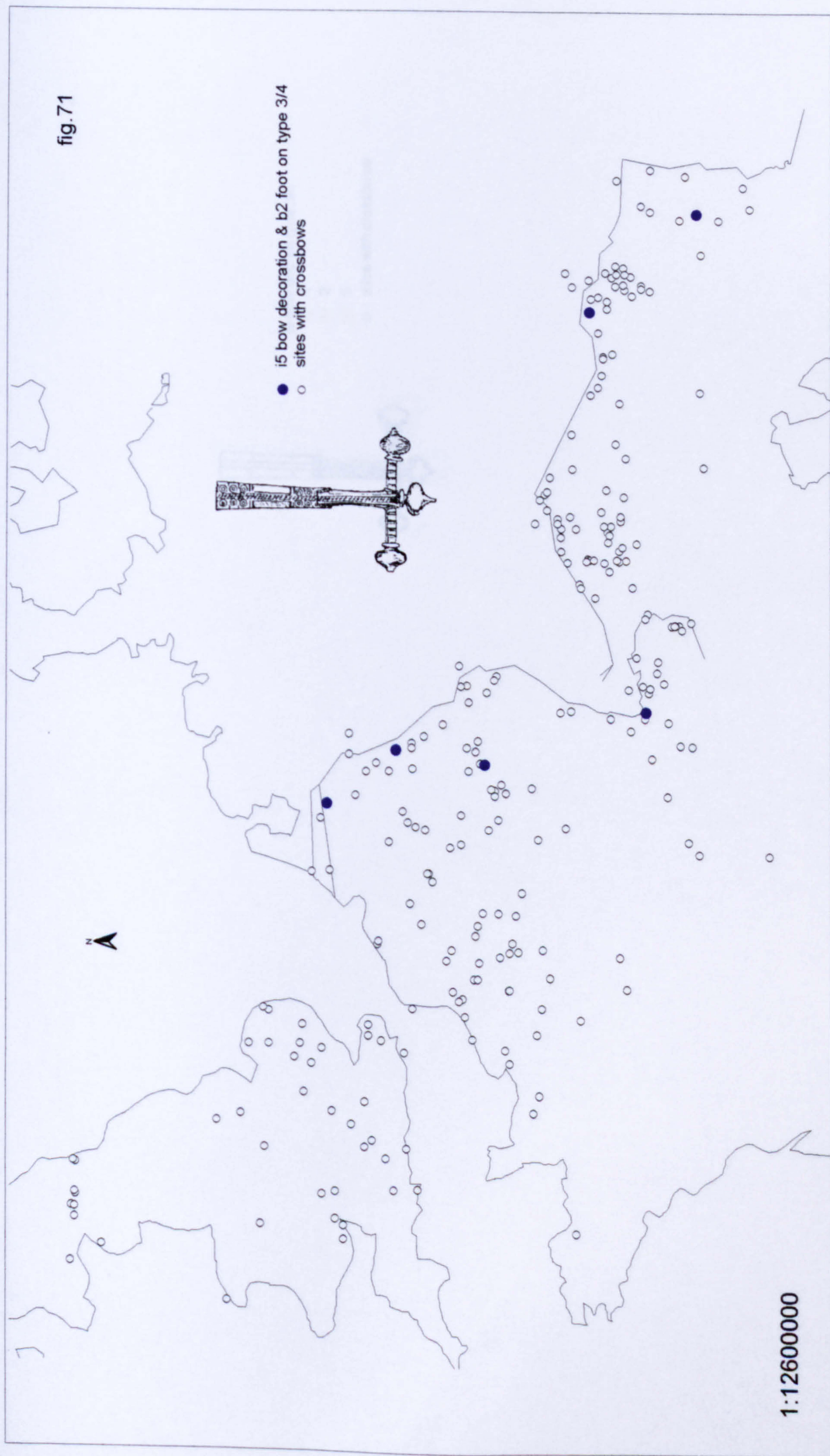


fig.71

1:12600000



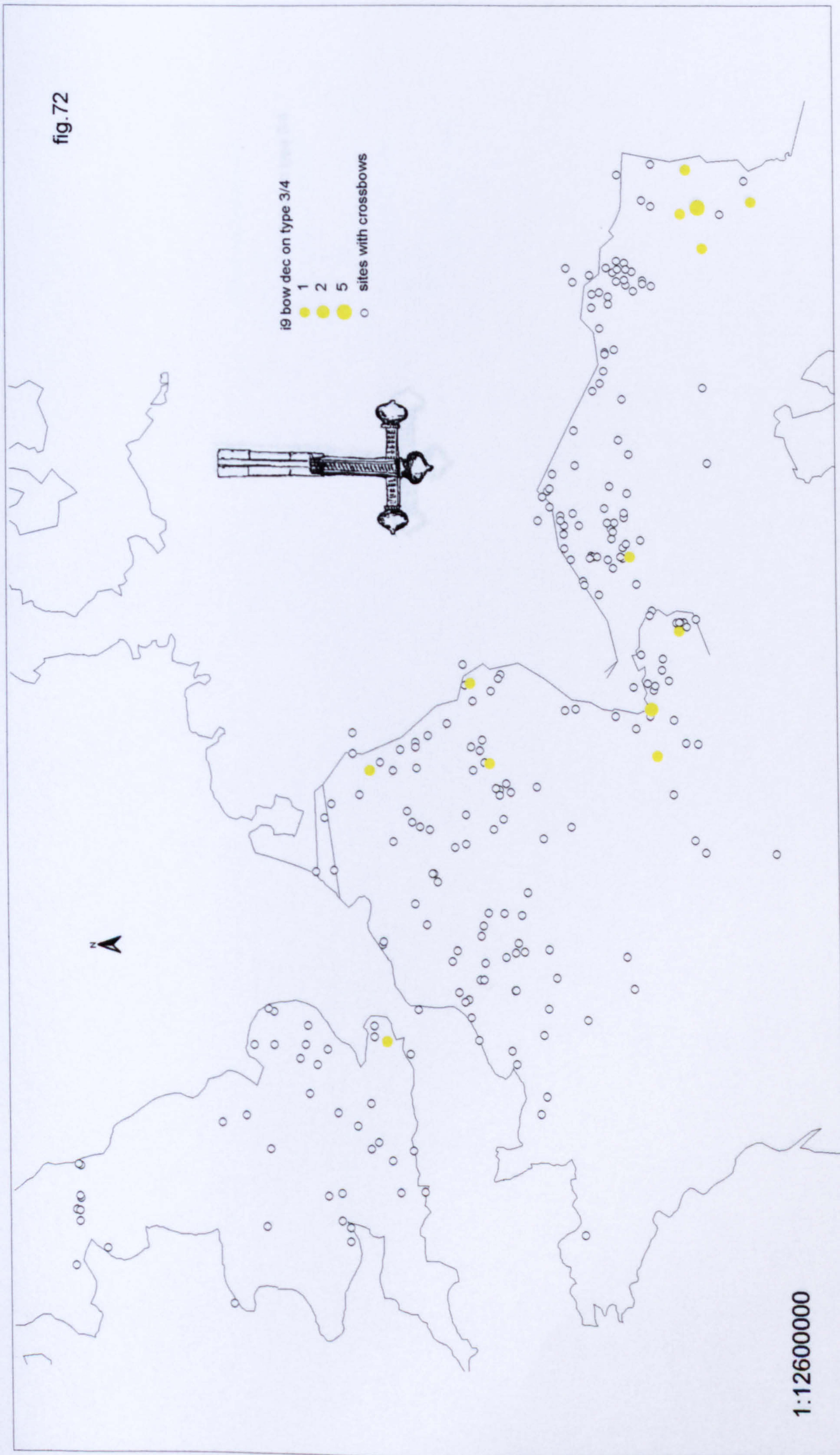
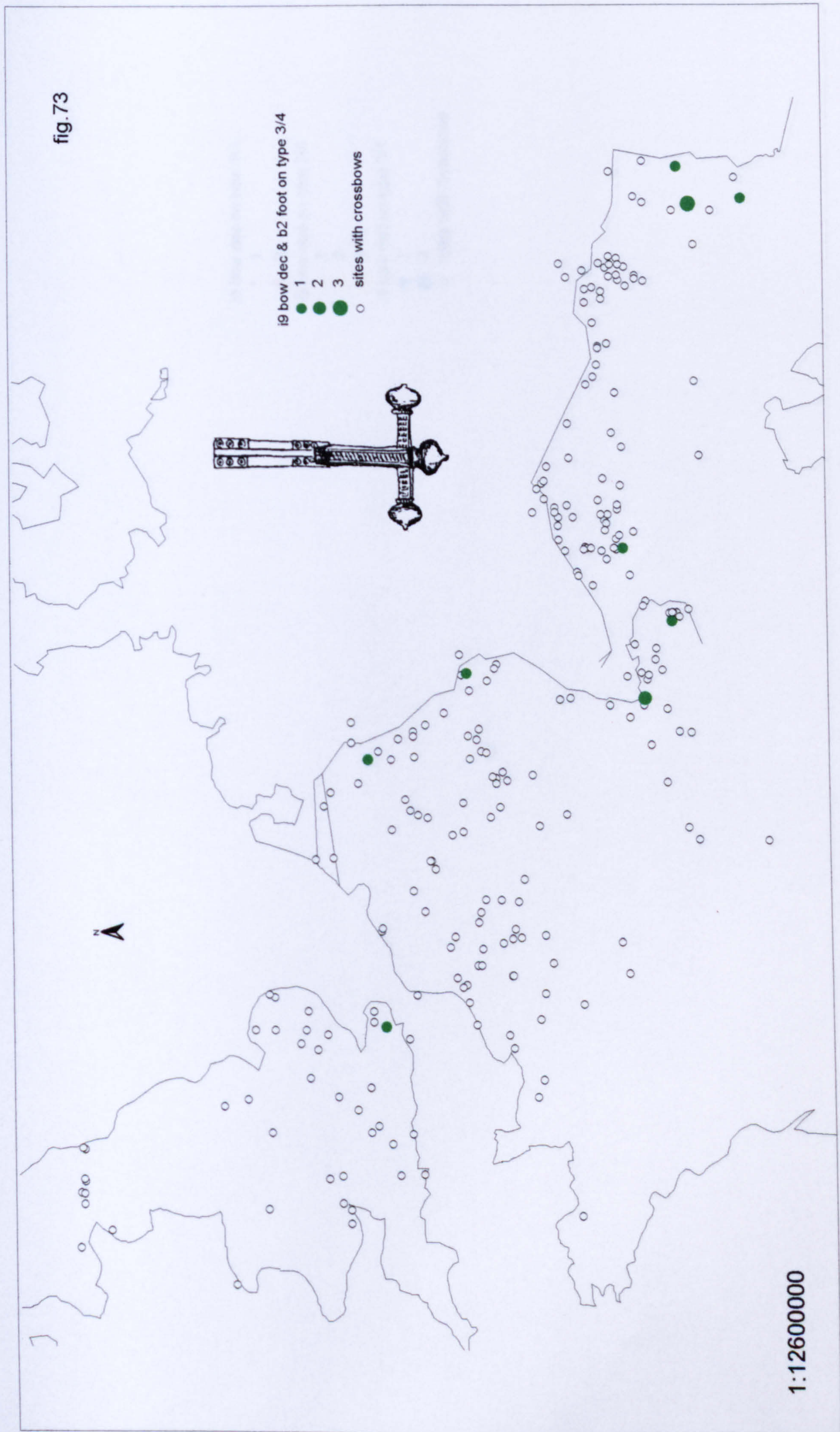


fig.72

1:12600000







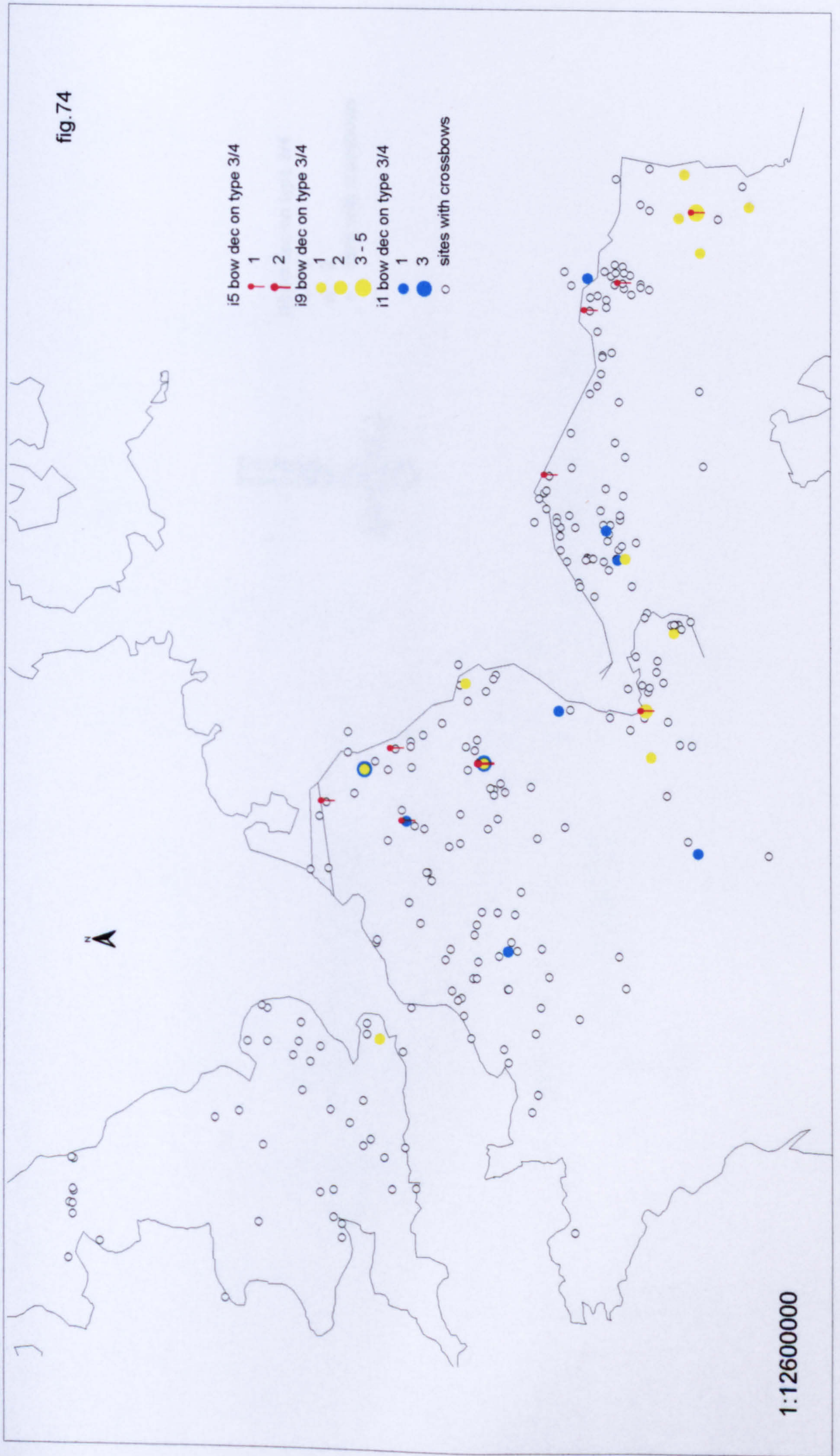


fig.74

1:12600000





fig.75

j1bow dec on type 3/4

1

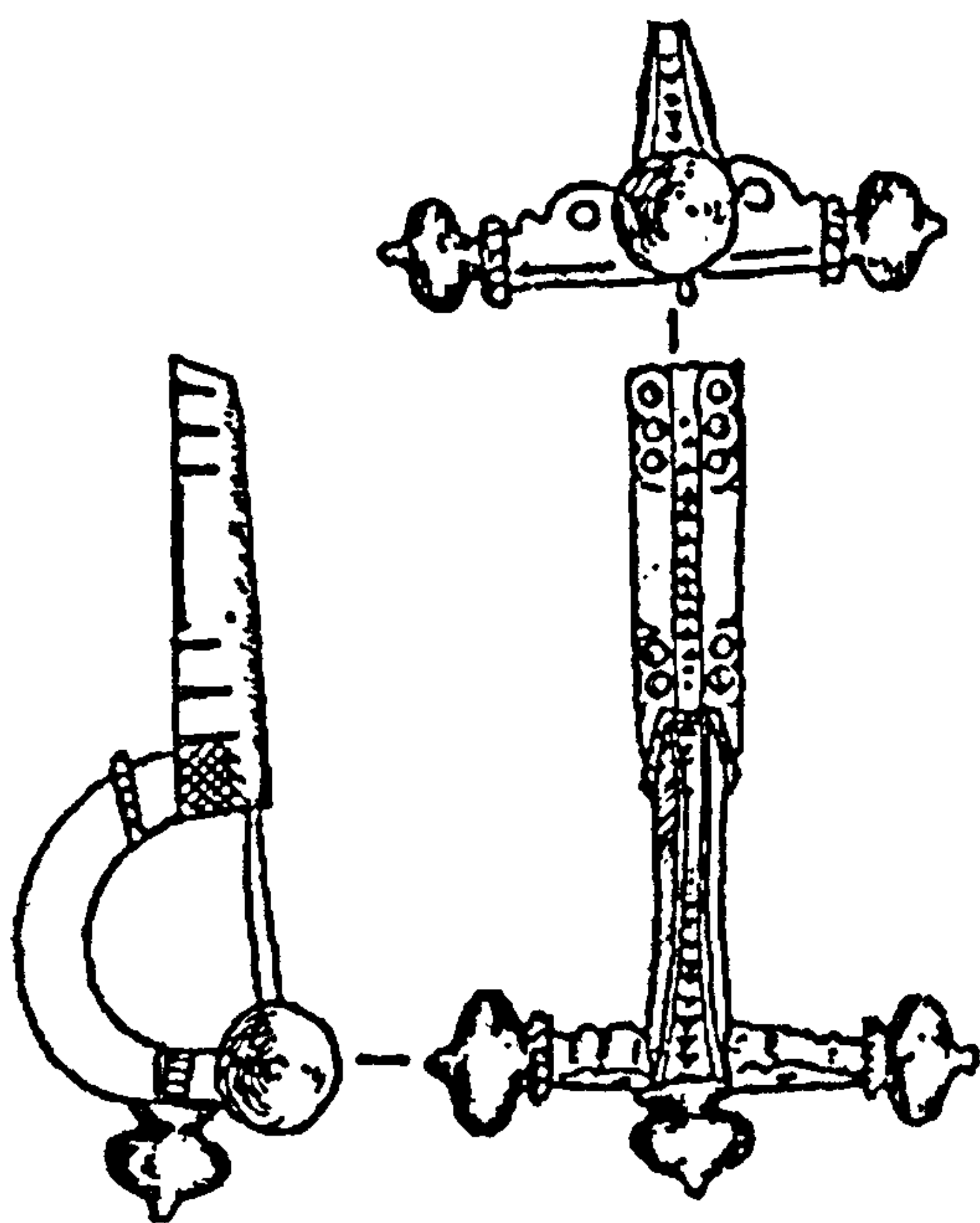
2

○ sites with crossbows

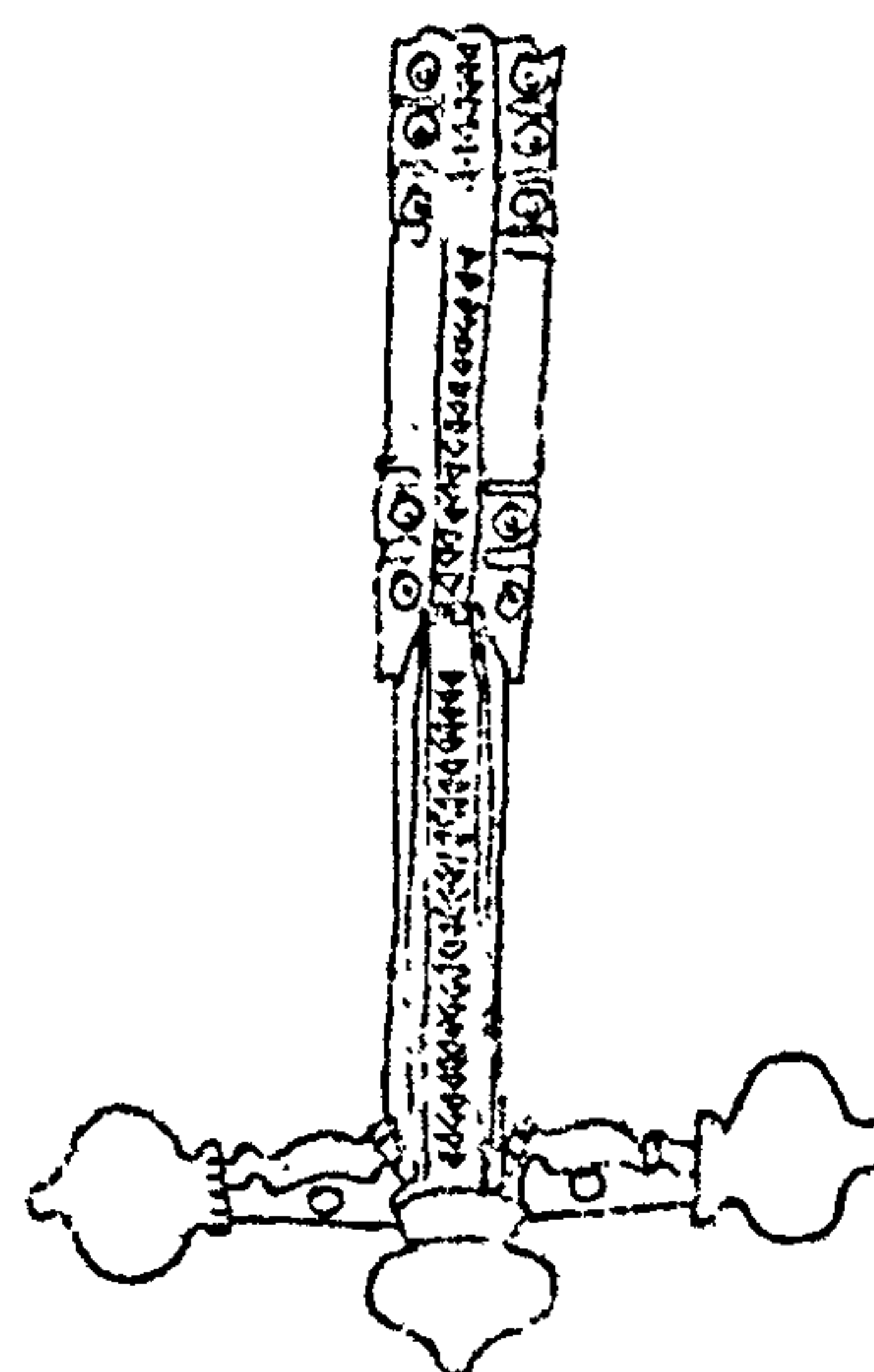
1:12600000



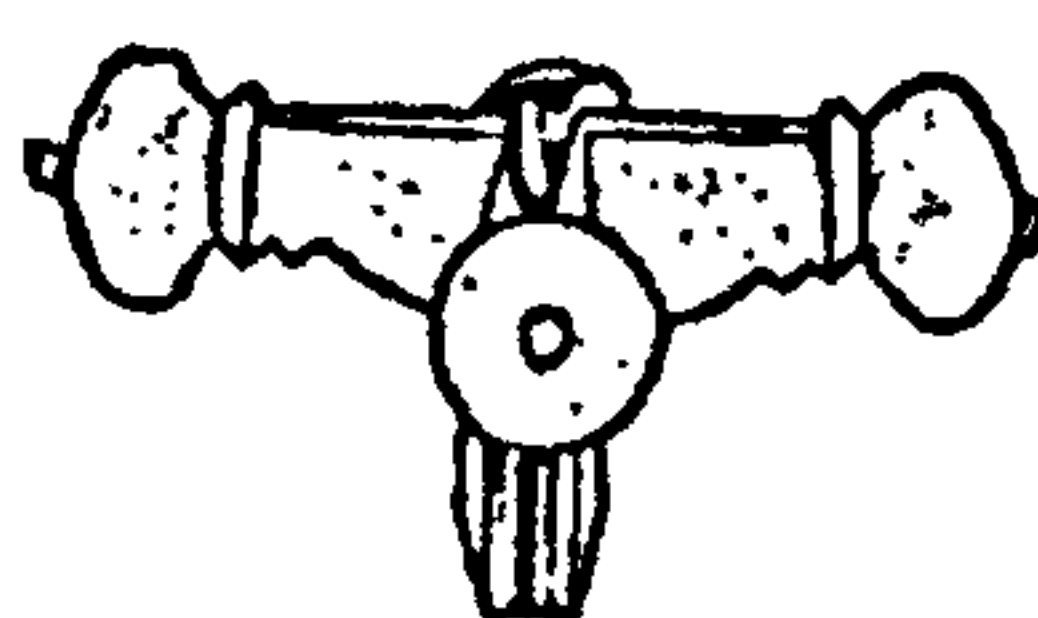
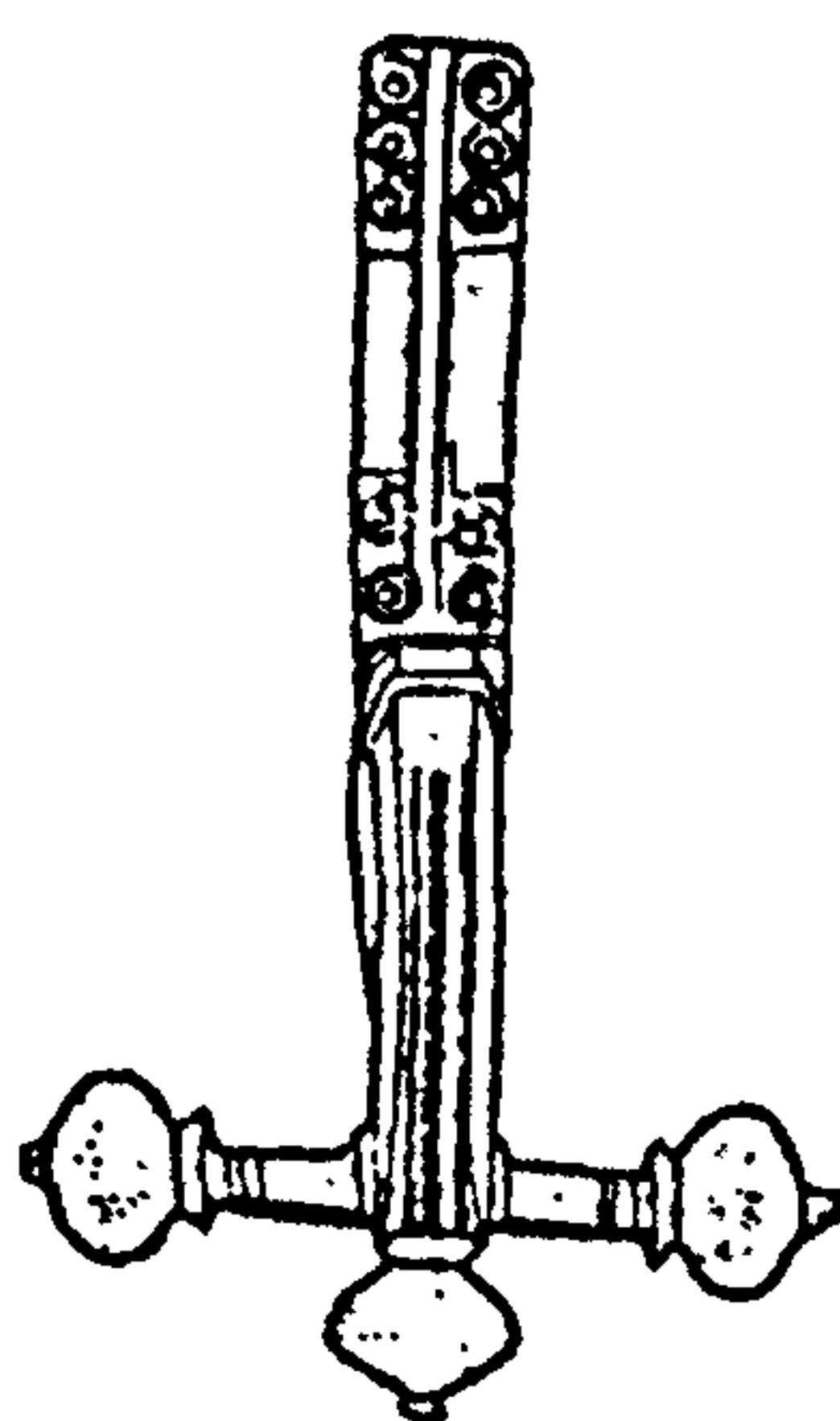
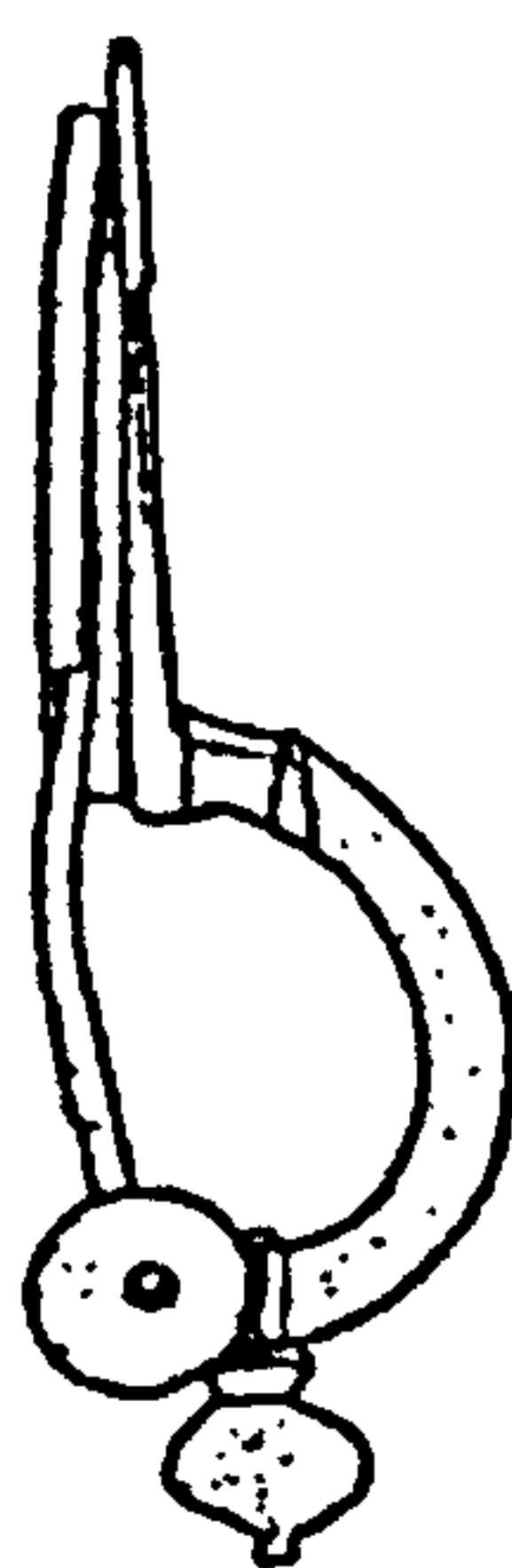
Type 3/4 identical pairs



Ságvár  
Burger 1966 fig.99

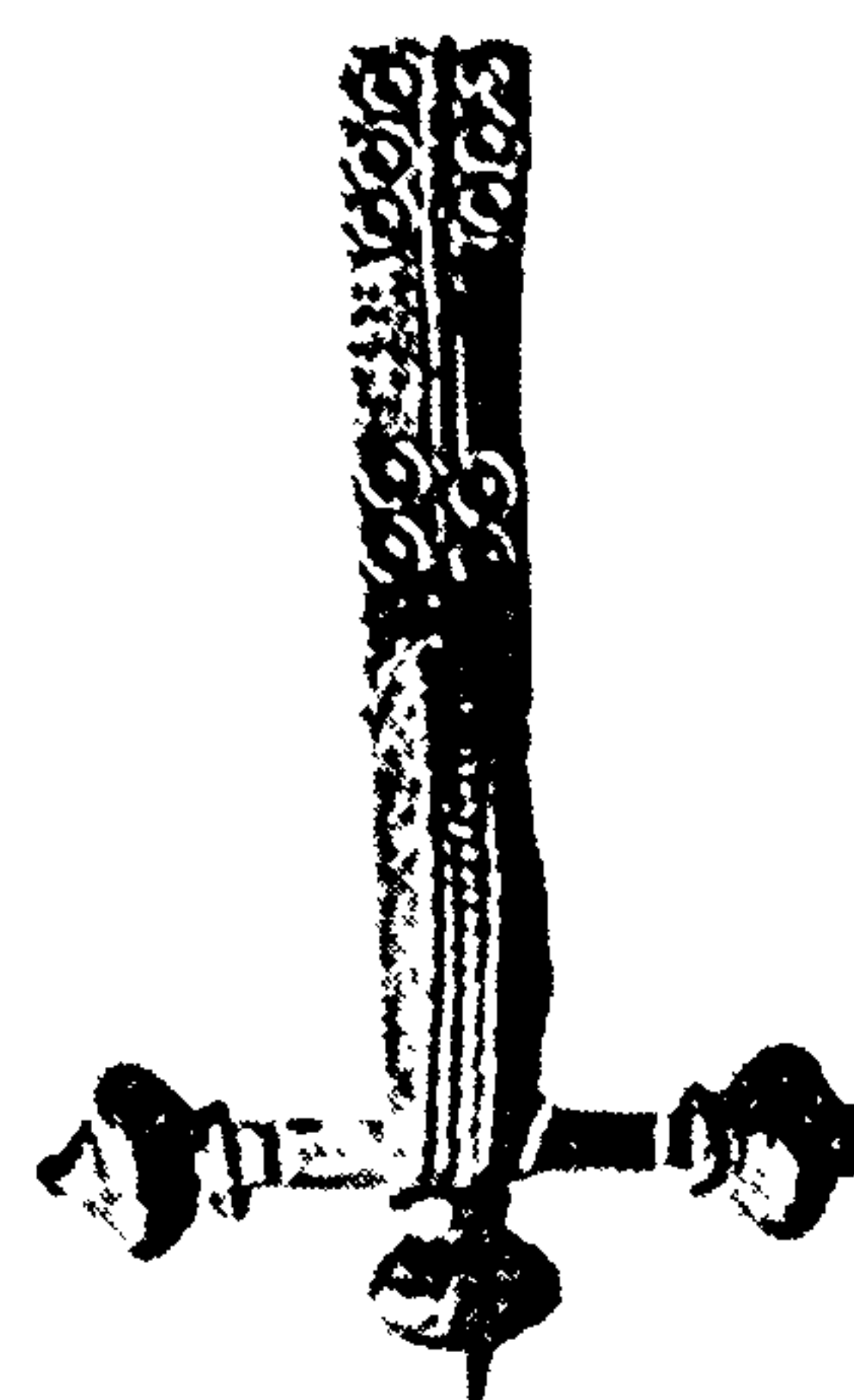


Tokod  
Mócsy 1981 gr.19



Neuberg an der Donau  
Keller 1979 taf.4 8

at varying scales



Intercisa (Dunapentele)  
Bóna & Vágo 1976 gr.33





fig.77

1:12600000



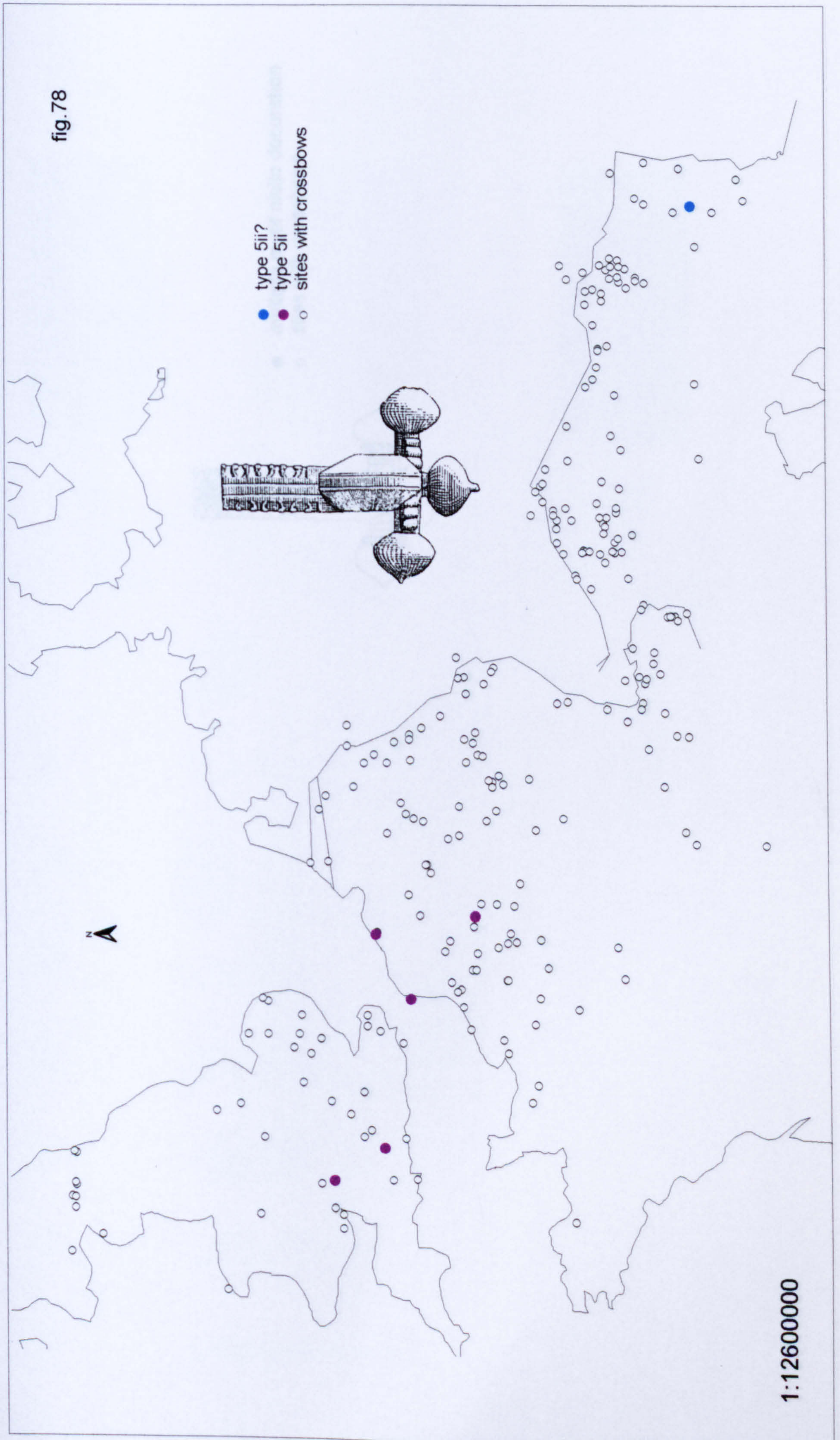


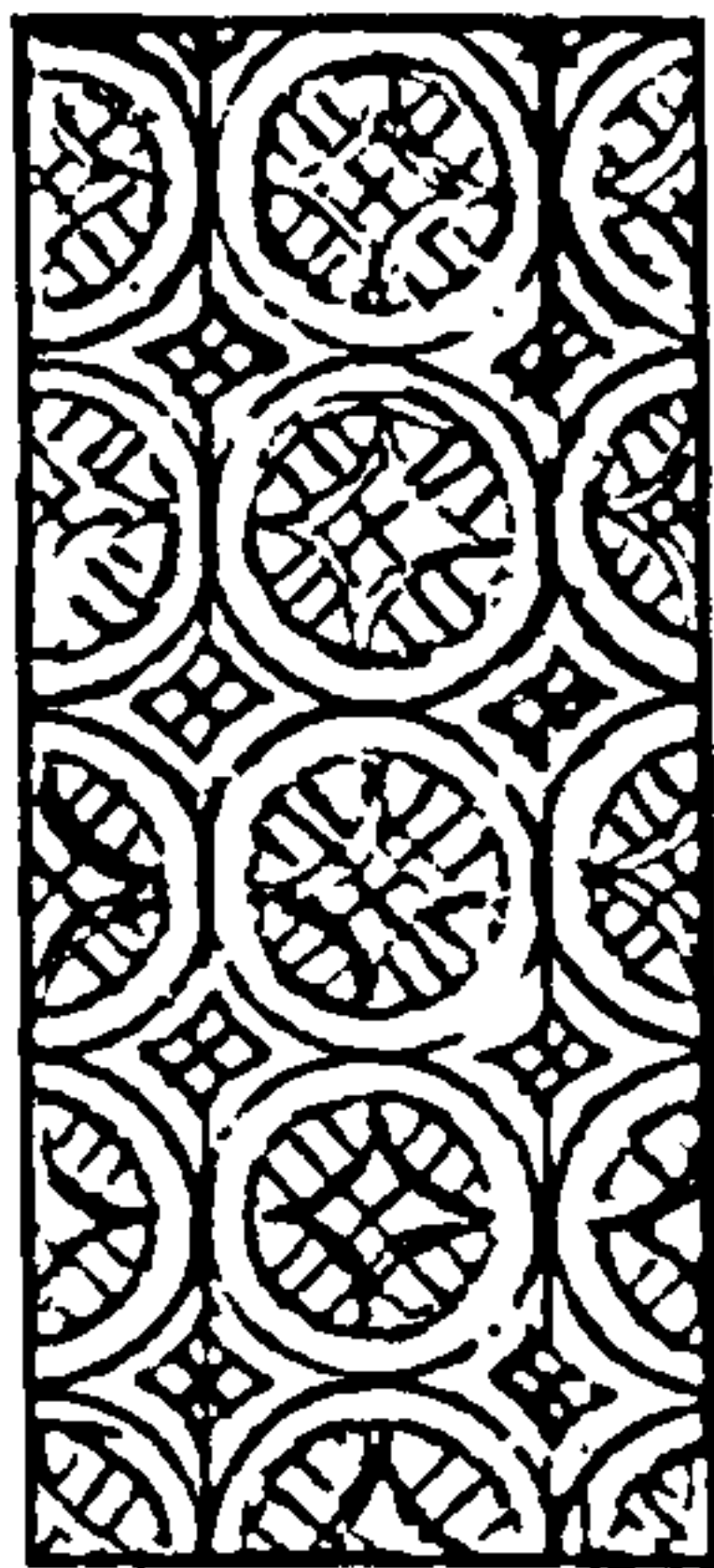
fig.78



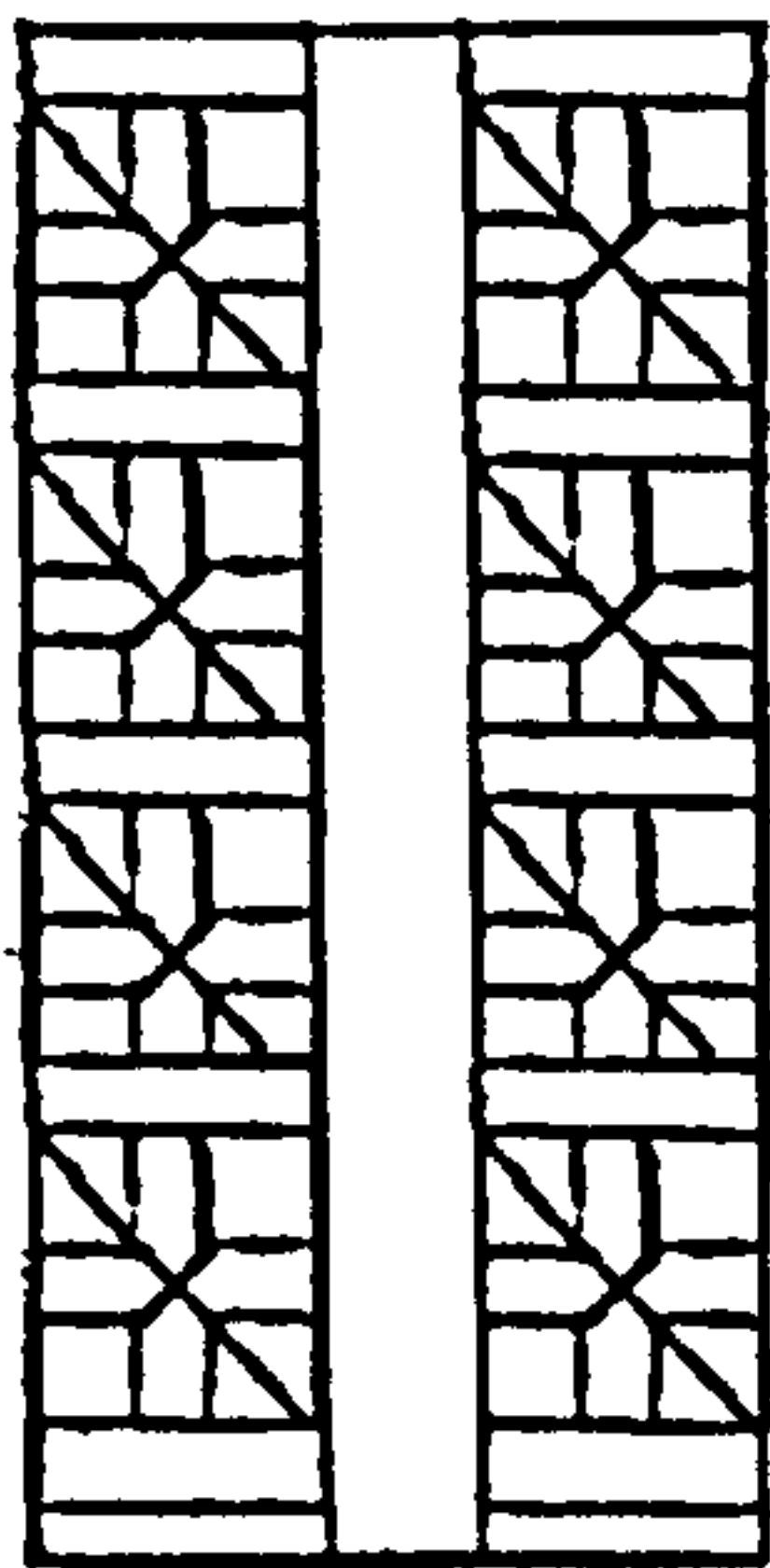
fig.79



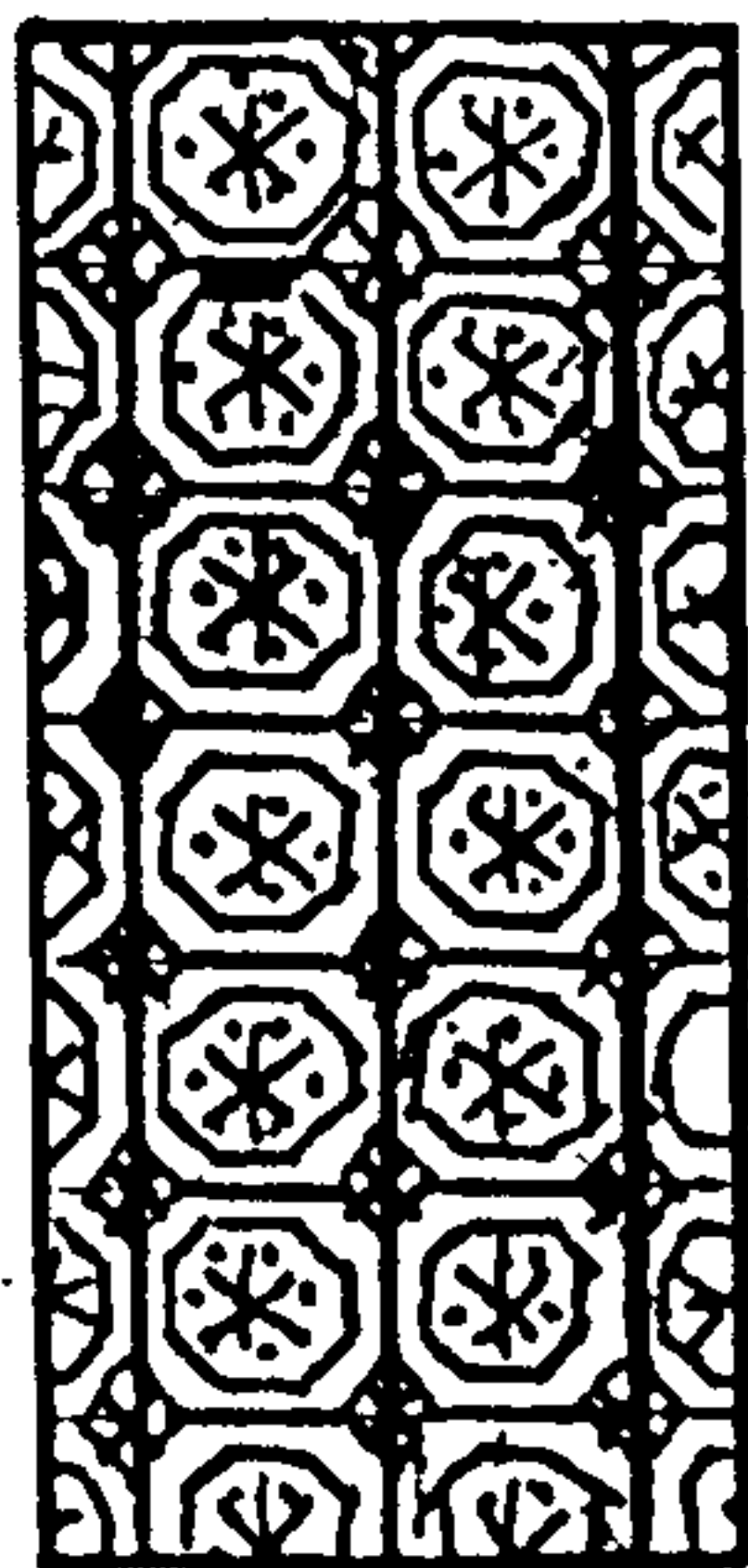




m8



m11



m20

A



B



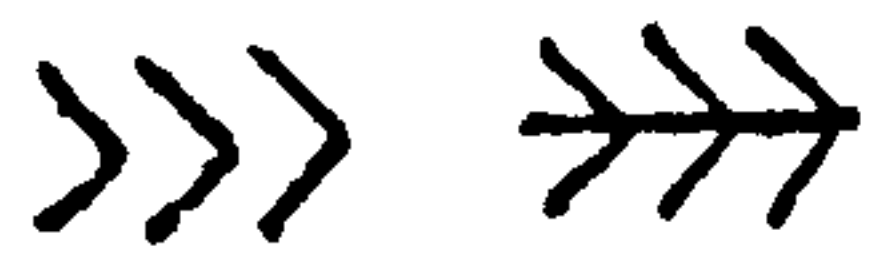
C



D



E



F



G

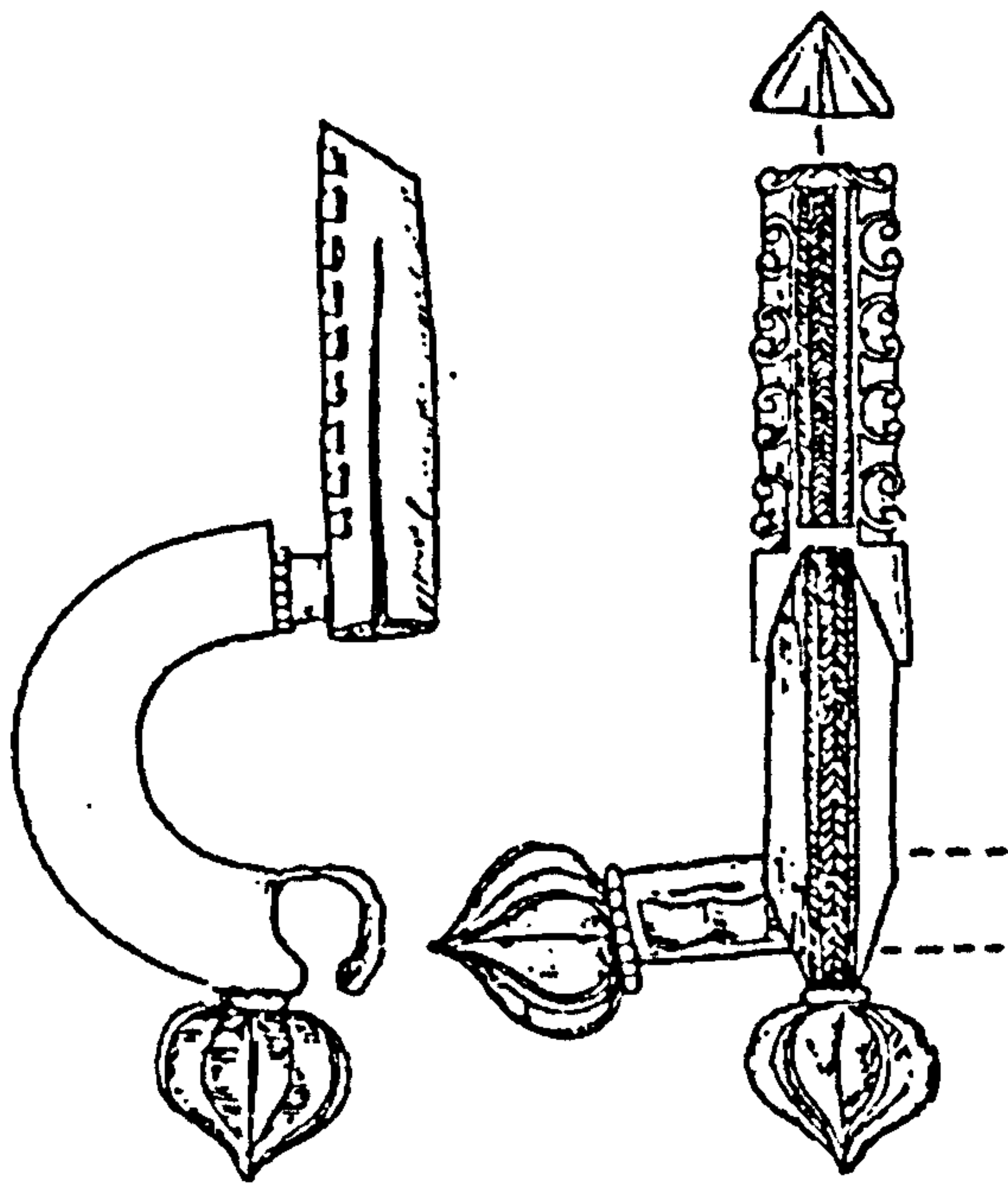


H

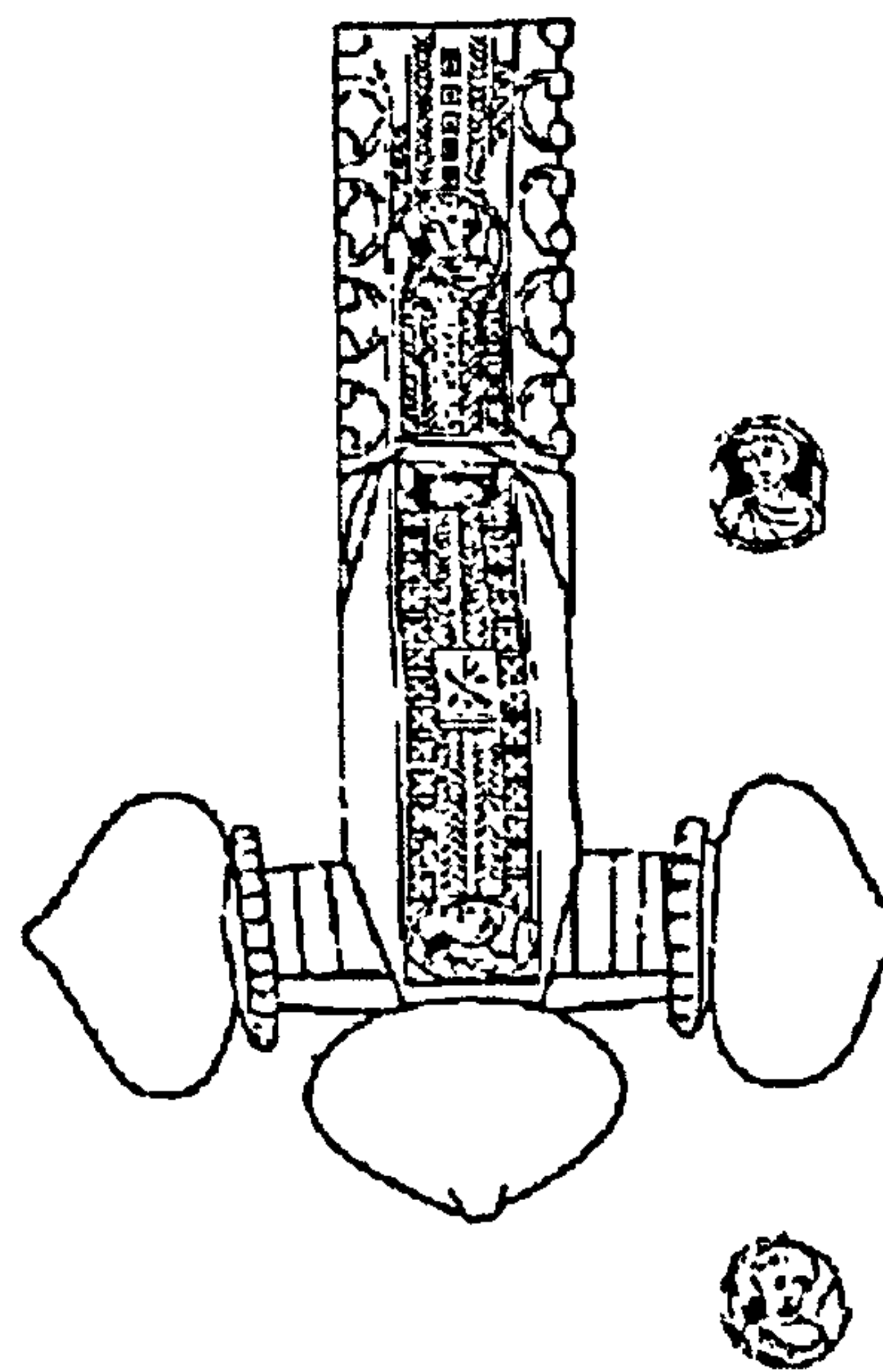
repeating motif as top



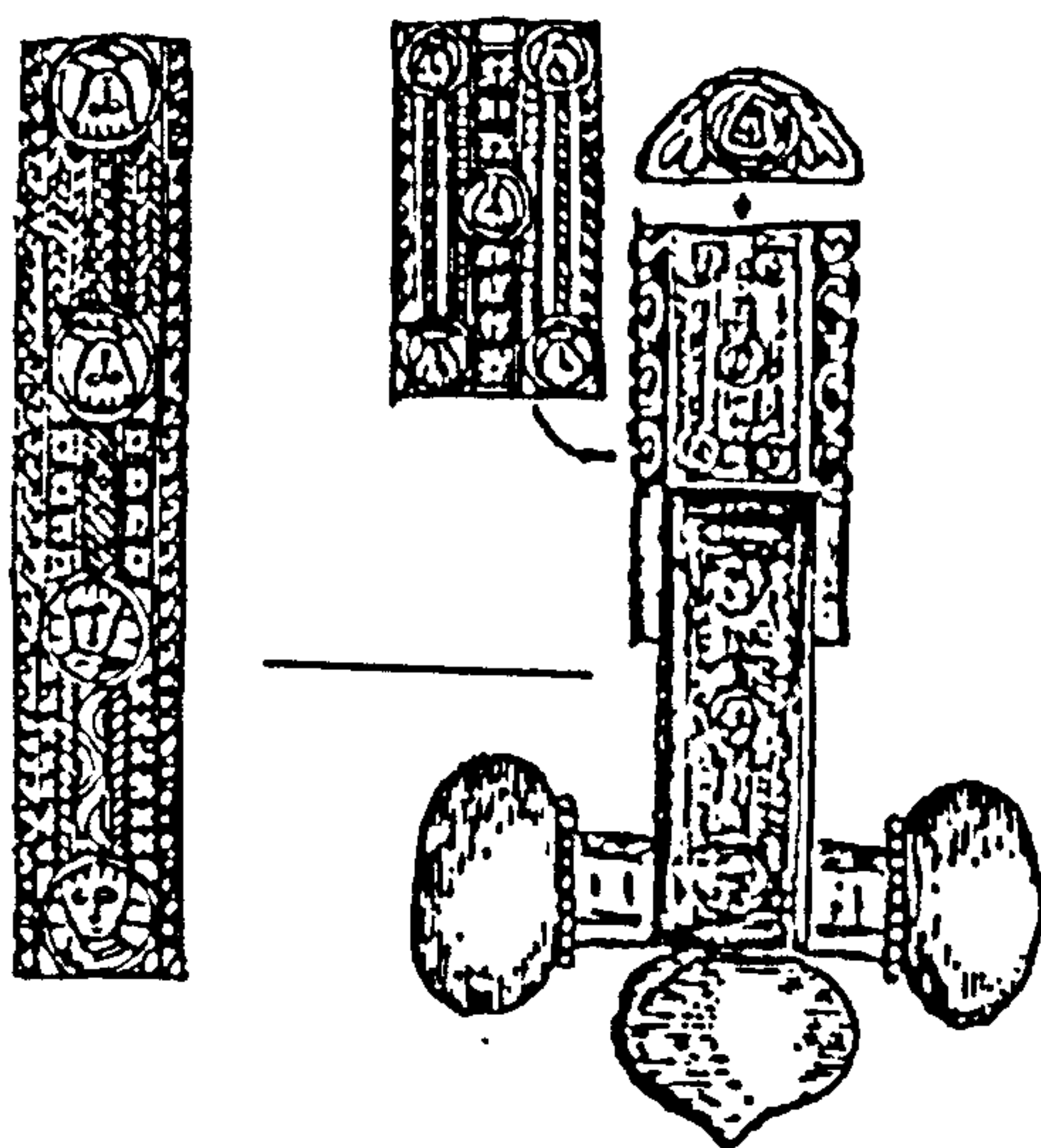
Type 5 linking motifs



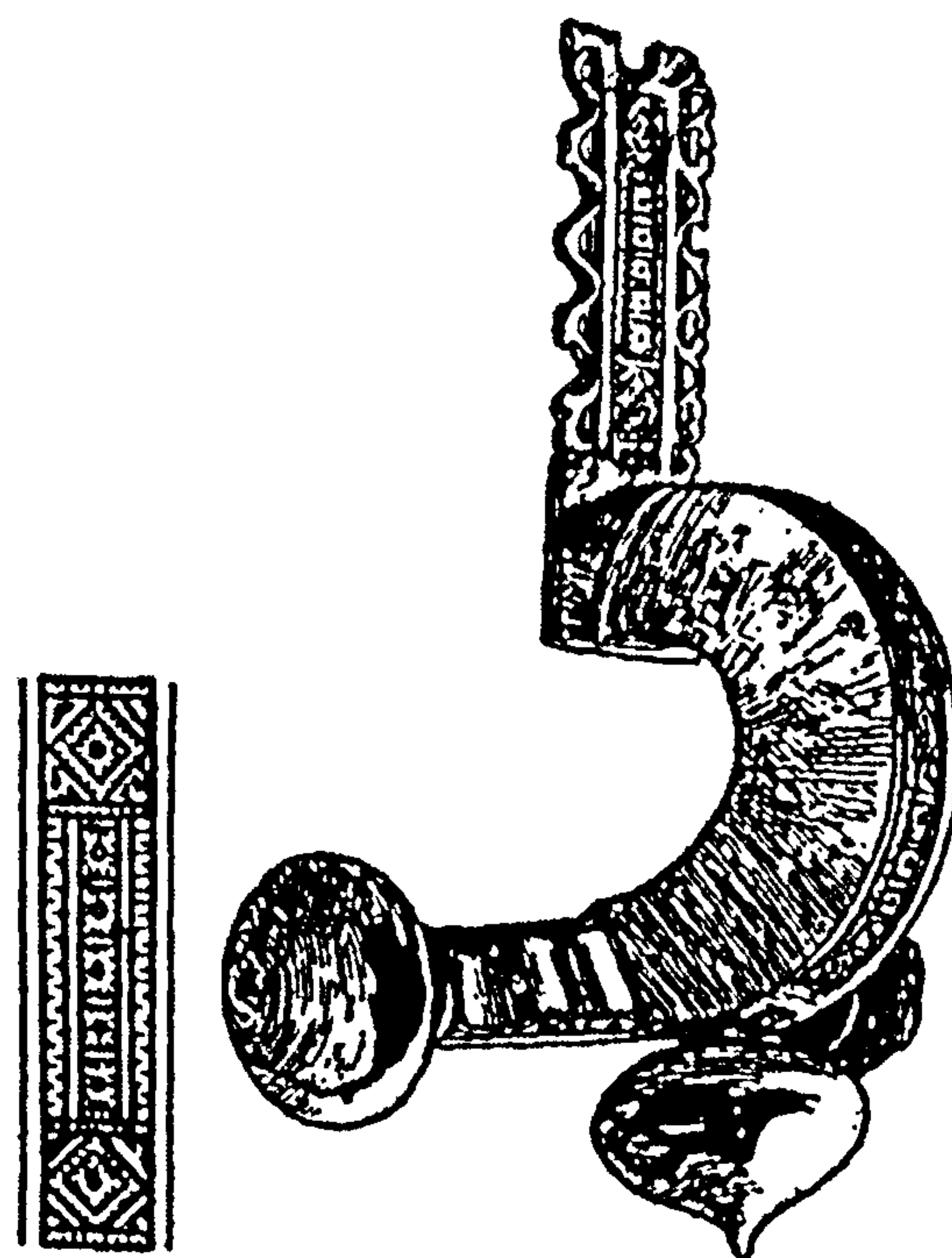
Sagvar  
Burger 1966 gr.310 2



Basel  
Laur-Belart 1959 abb.41



Sagvar  
Burger 1966 gr.114



Bingen  
Behrens 1920 abb.78

at varying scales



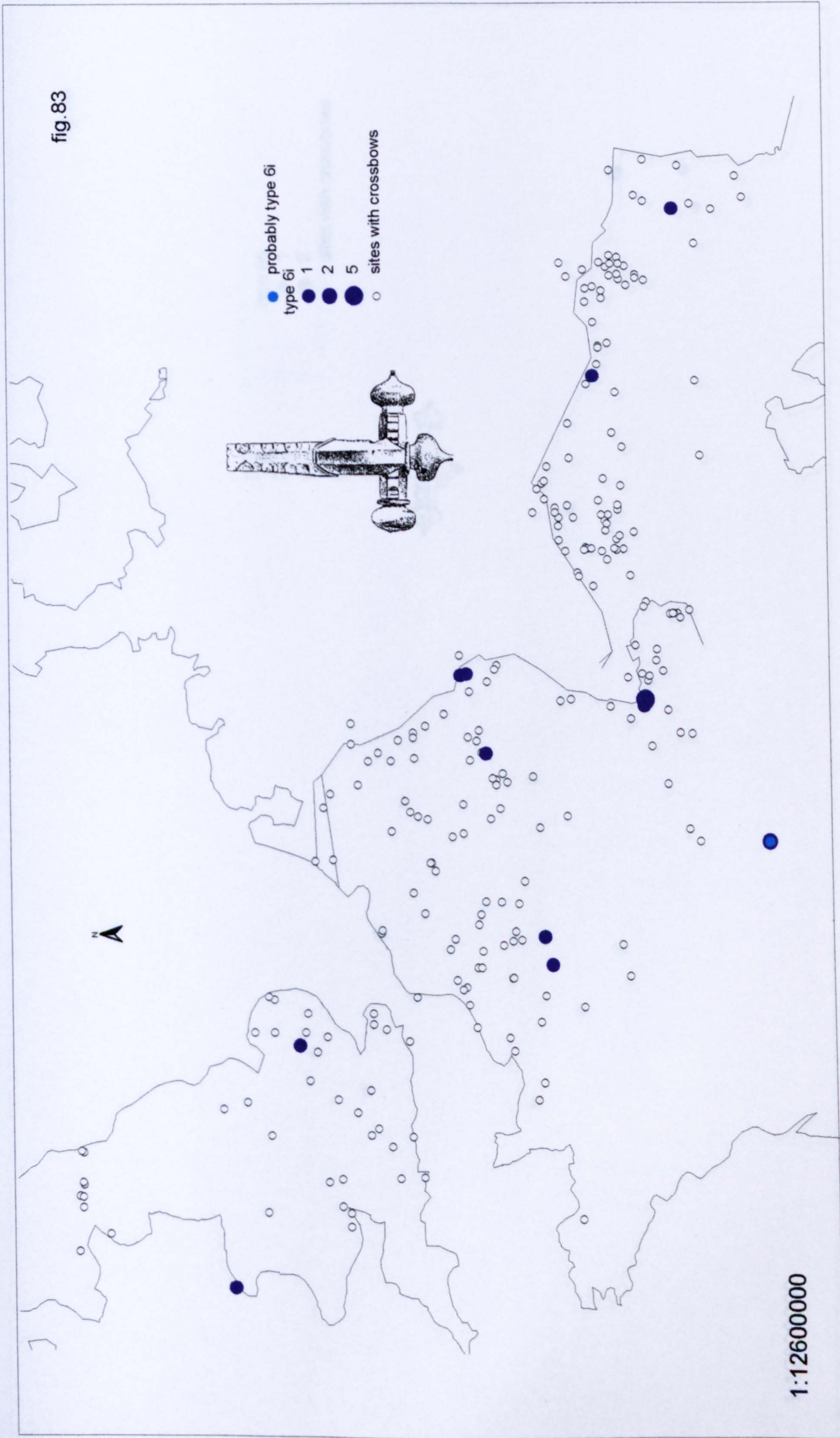


fig. 83

1:12600000



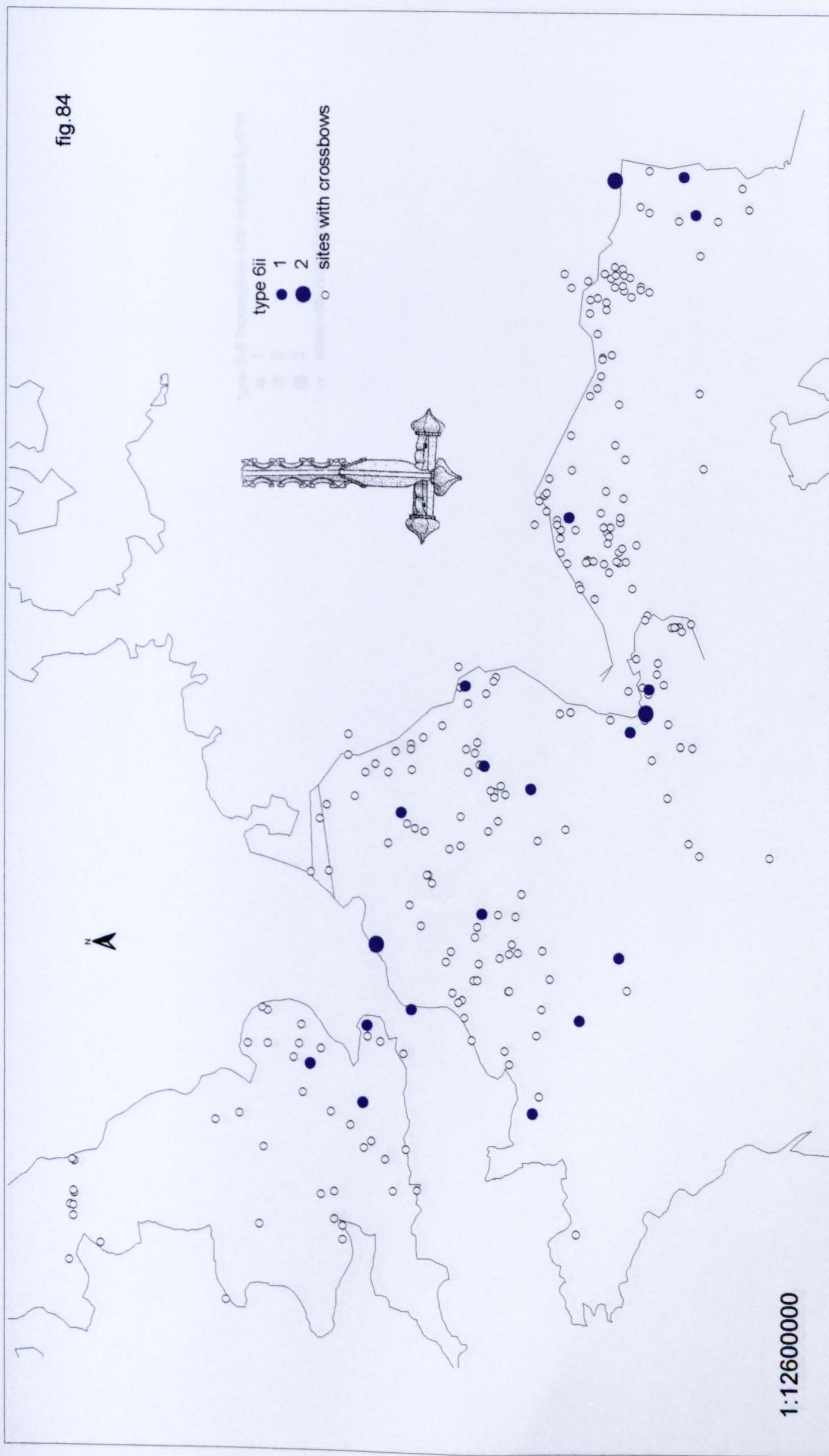


fig.84

1:12600000

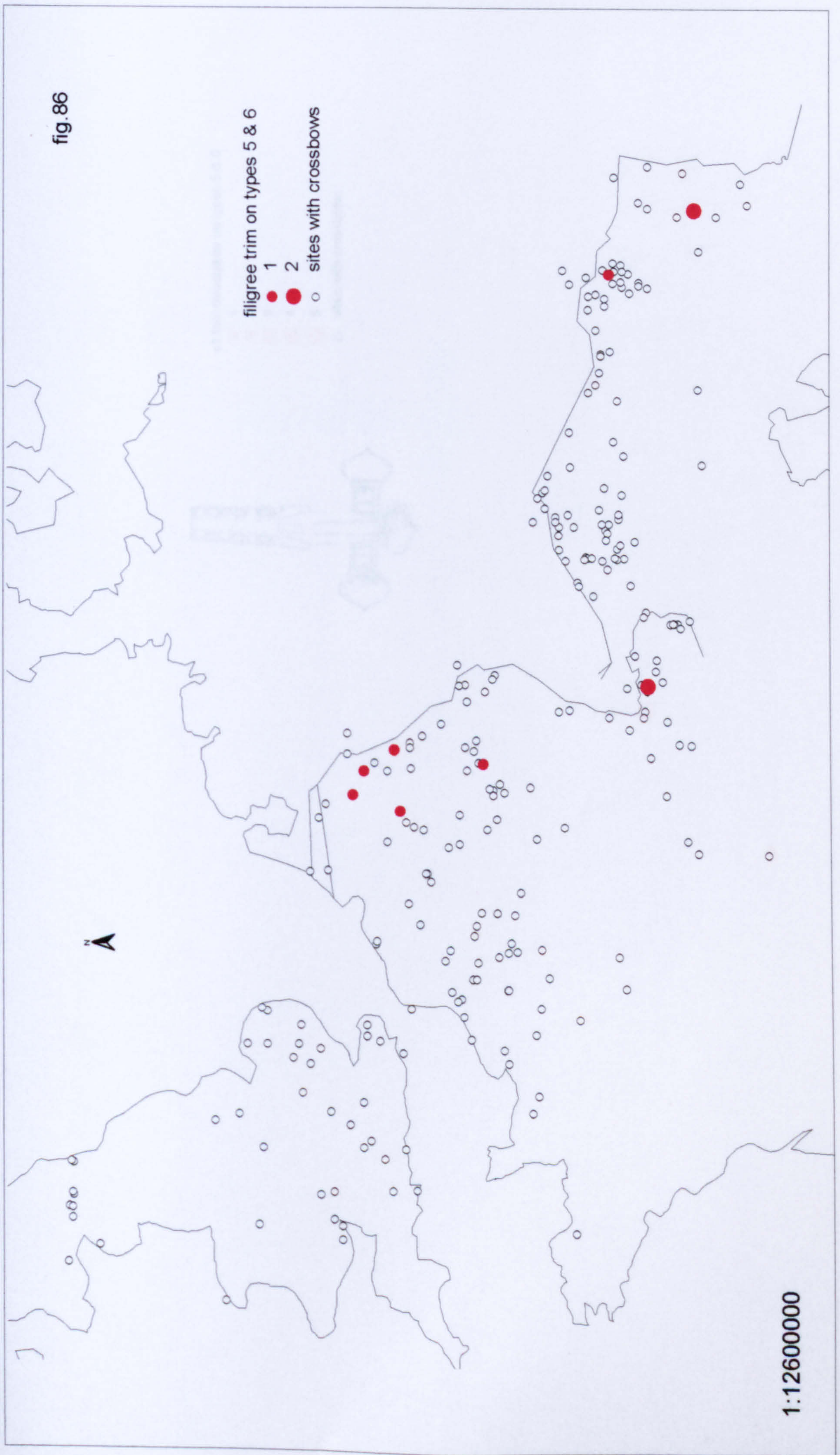




fig.85

1:12600000







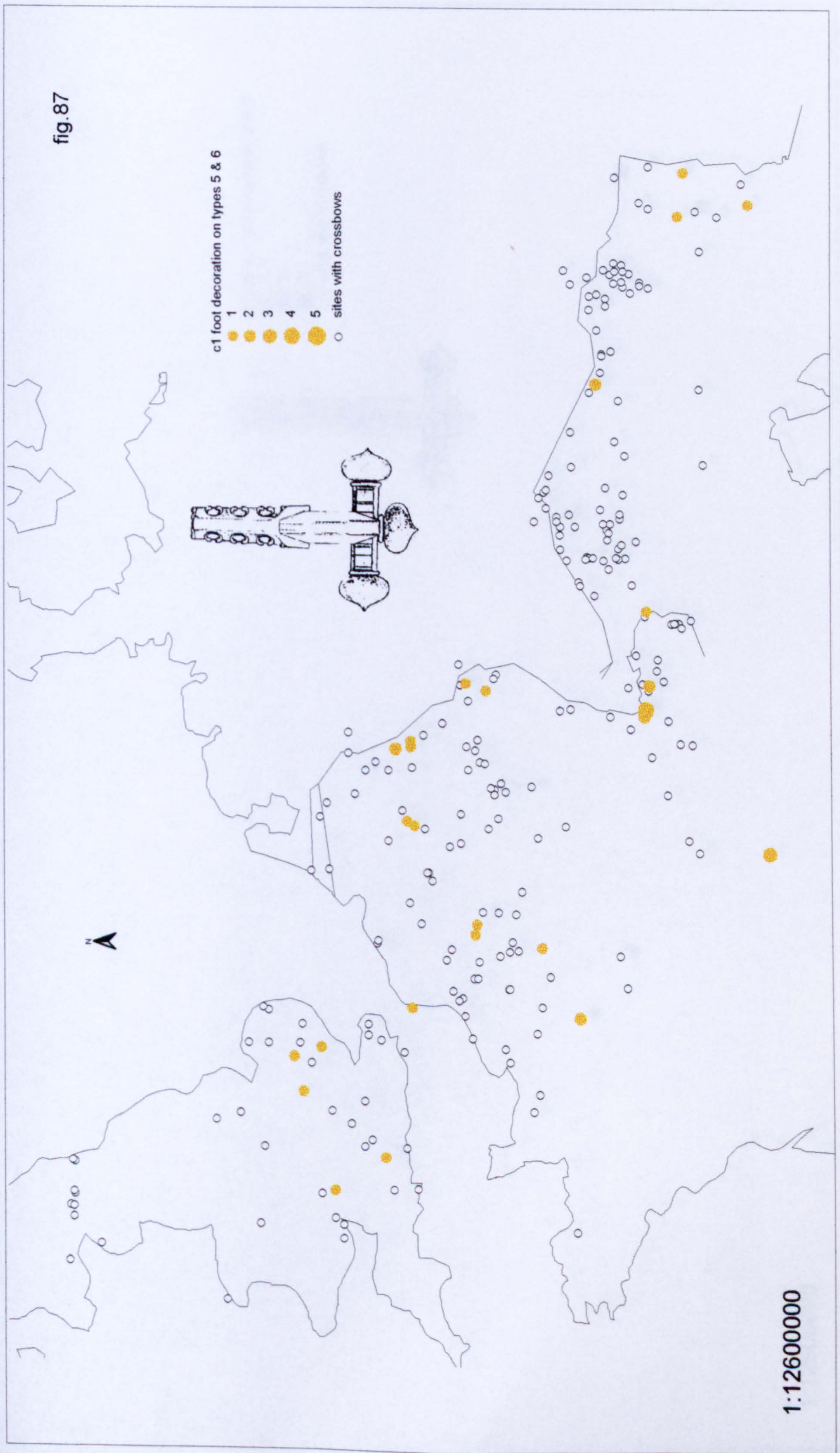
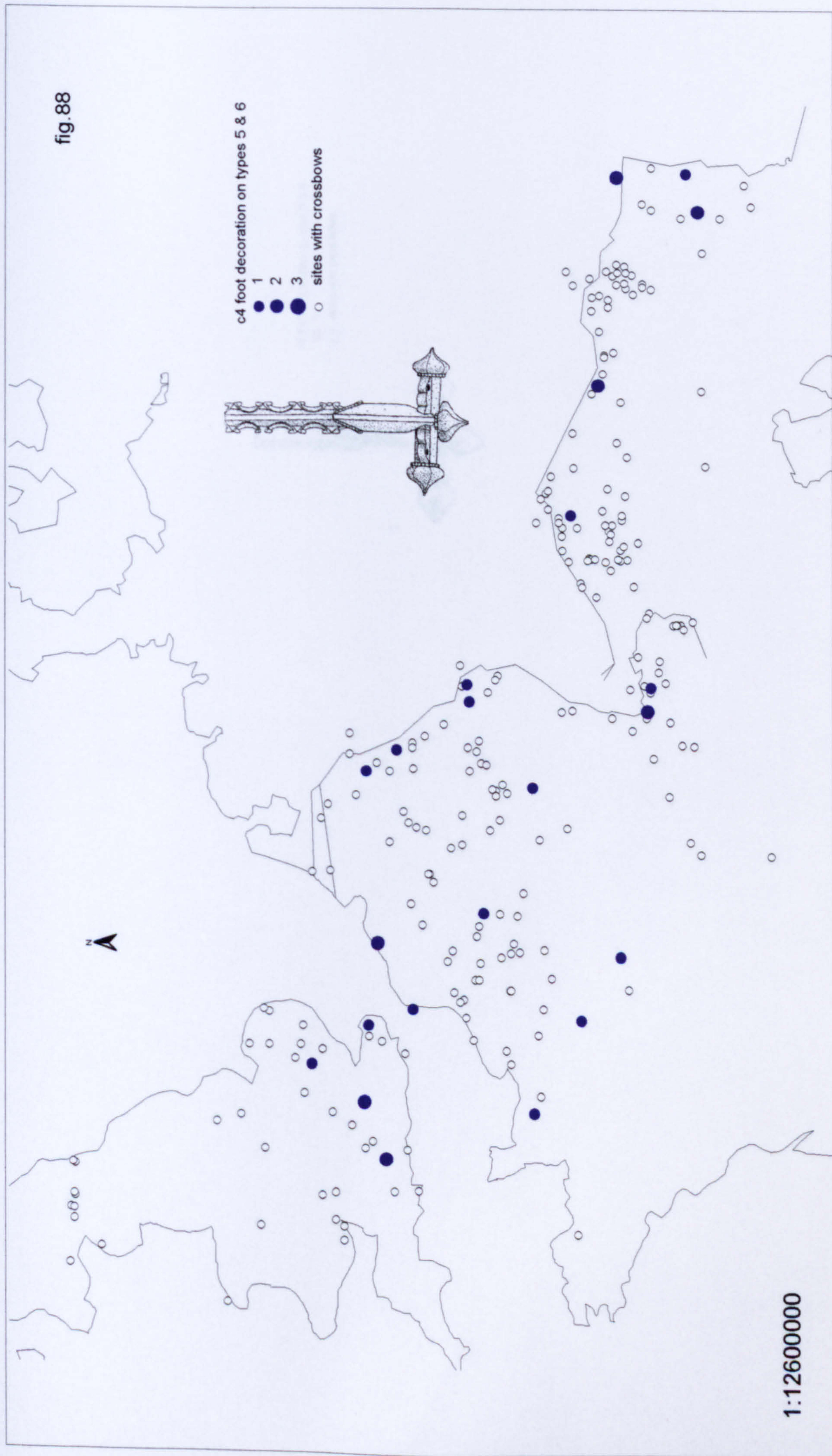


fig.87







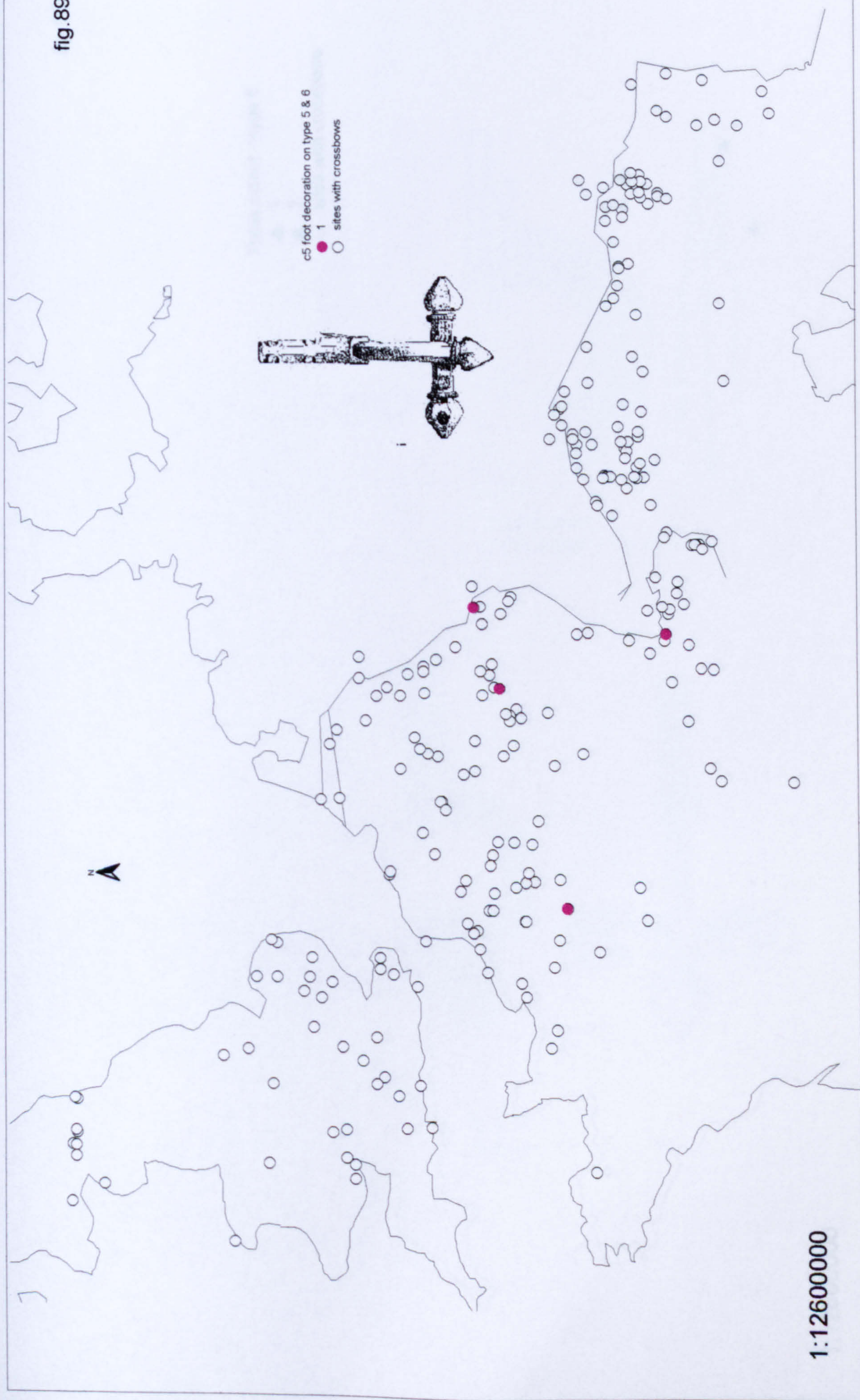


fig.89



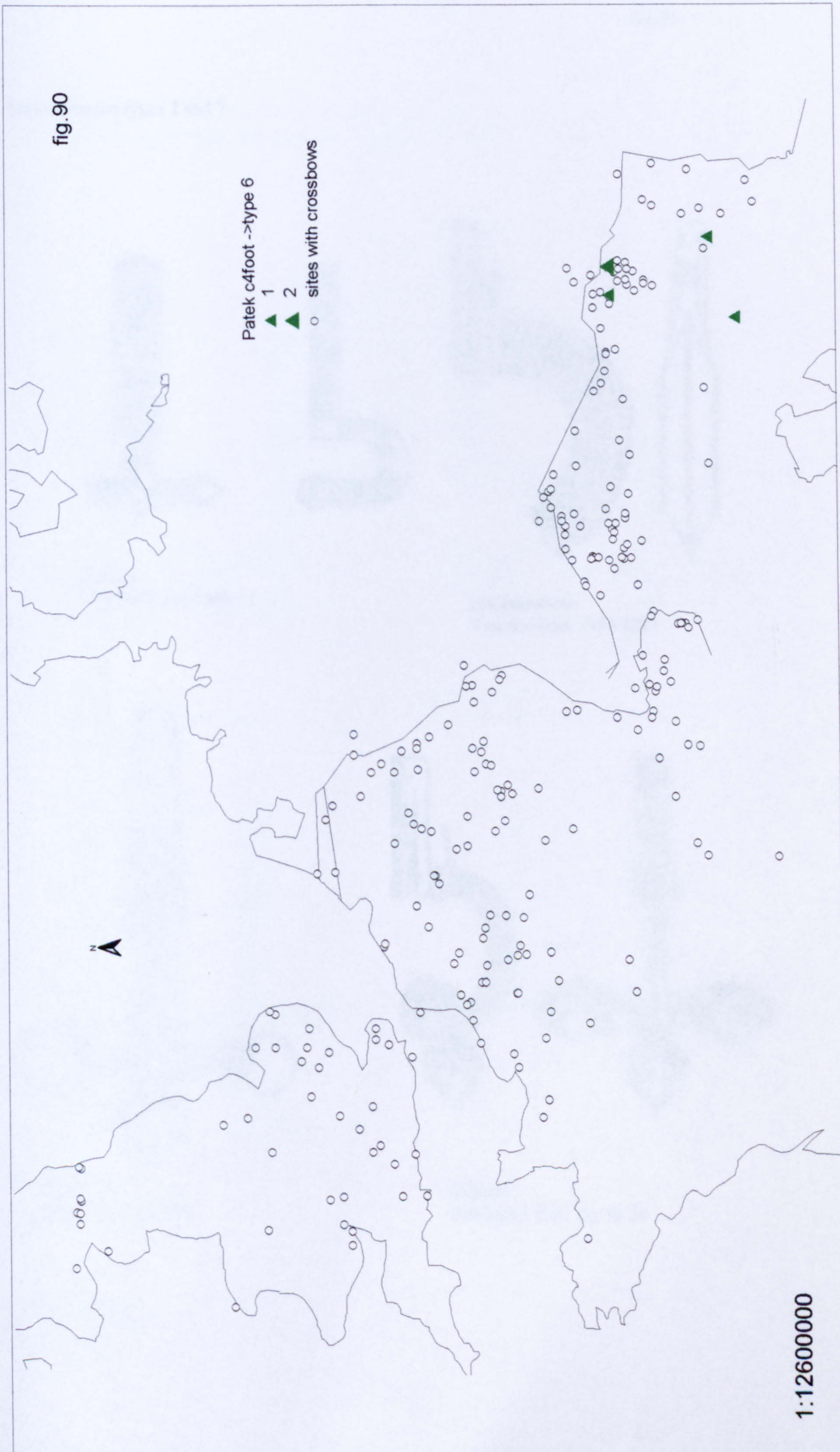


fig.90

Patek c4foot ->type 6

1

2

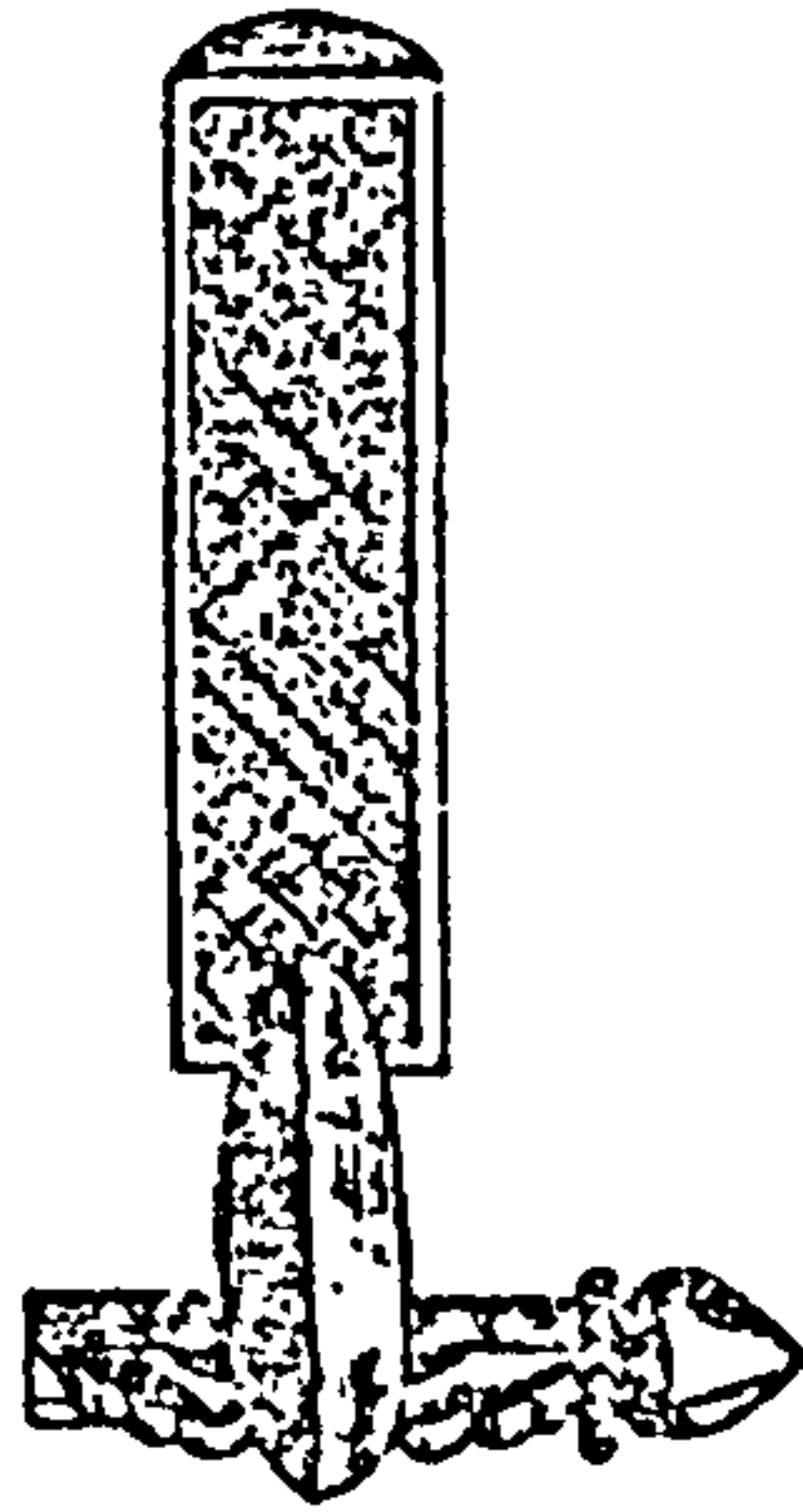
○

sites with crossbows

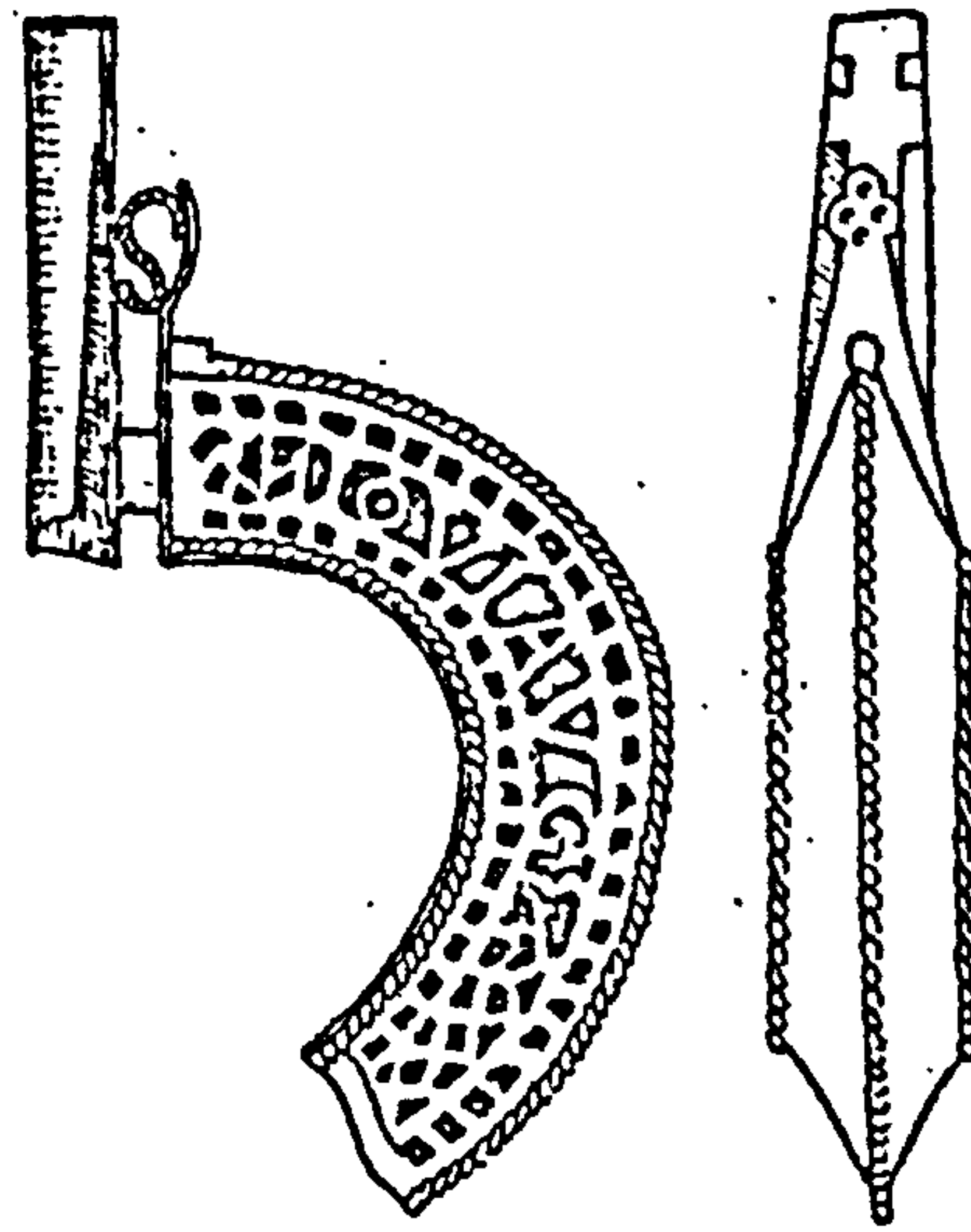
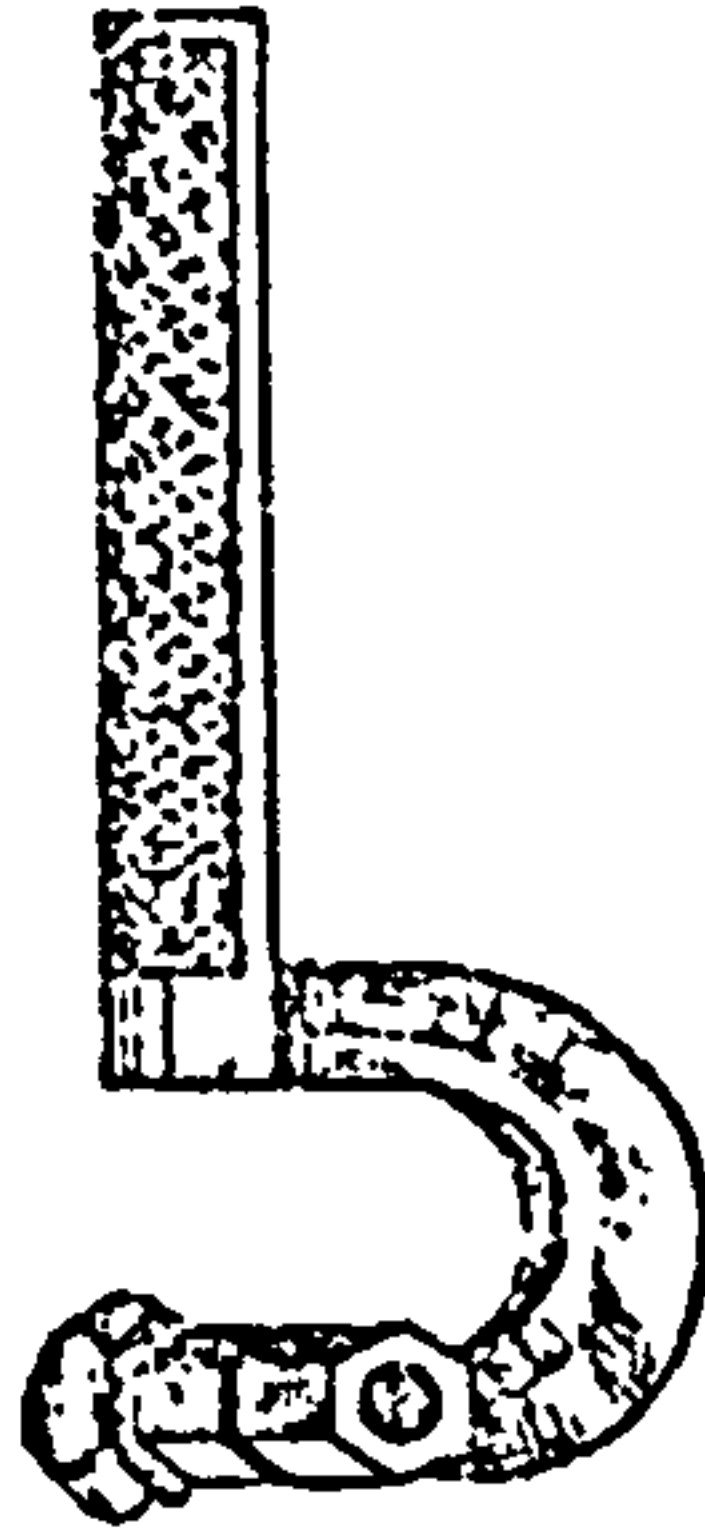
1:12600000



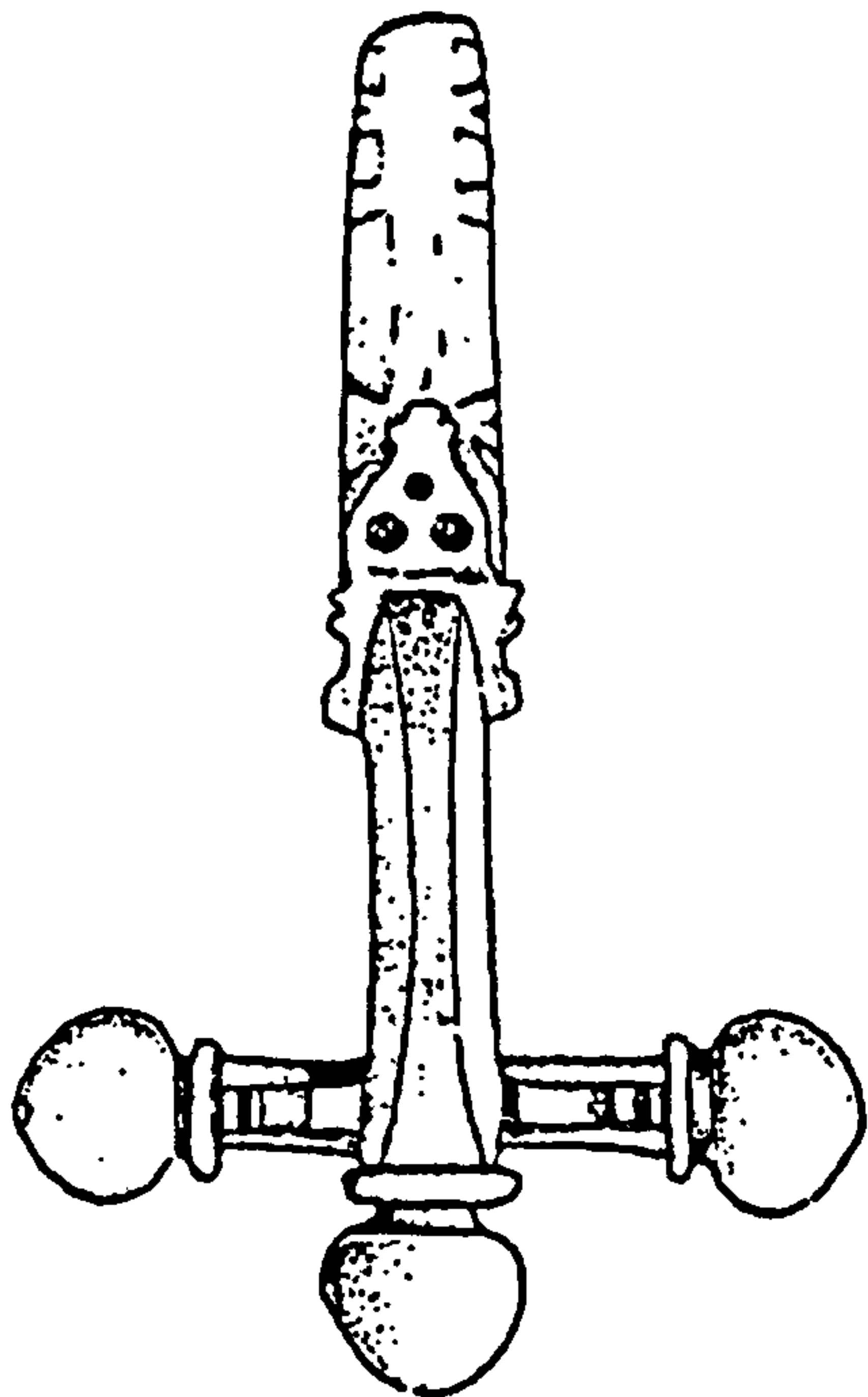
Links between types 2 and 7



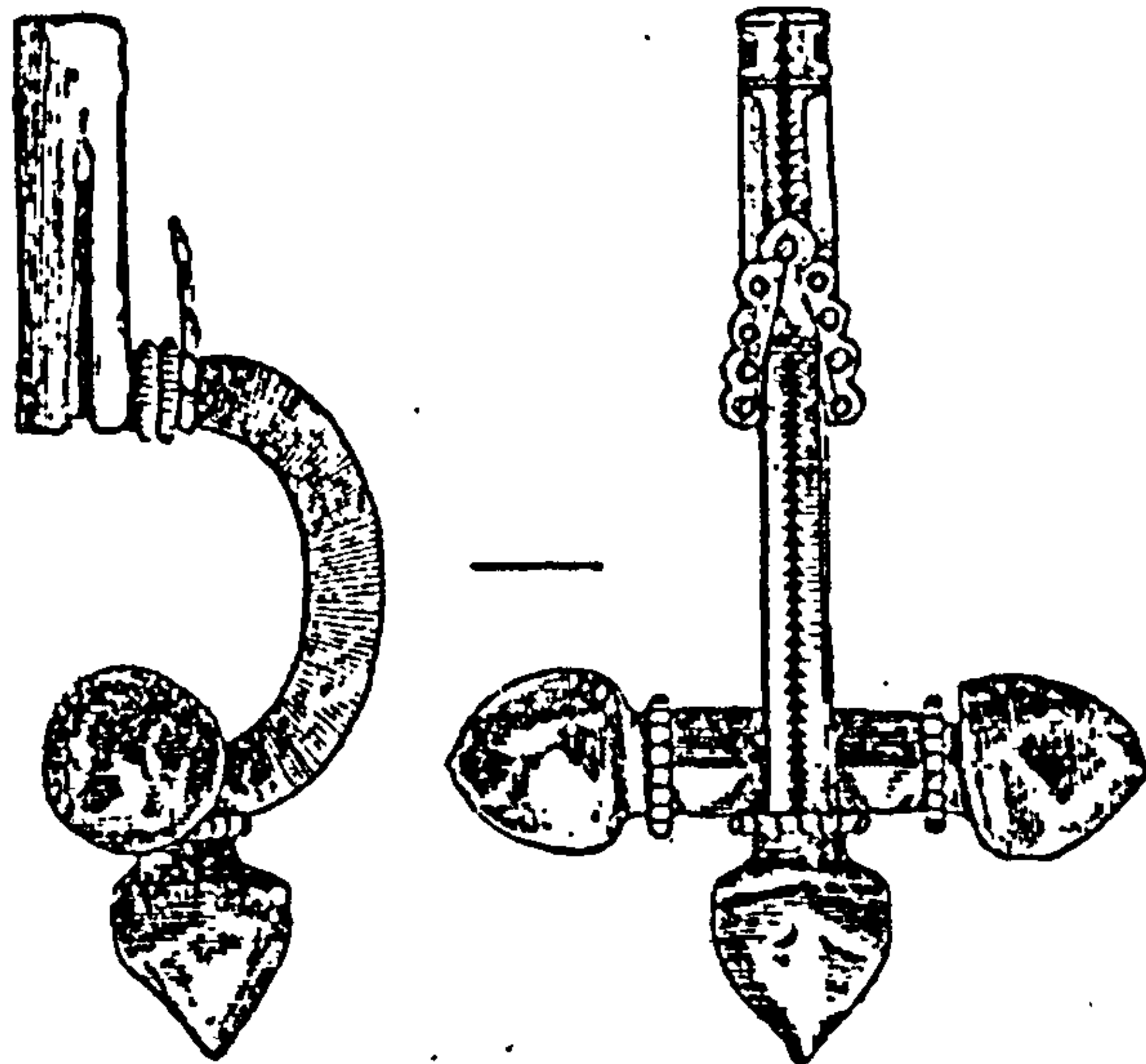
Tournai  
Motefindt 1916 abb.11



Erickstanbrae  
Van Buchem 1973 afb.7



Augst  
Riha 1994 t.38 2737

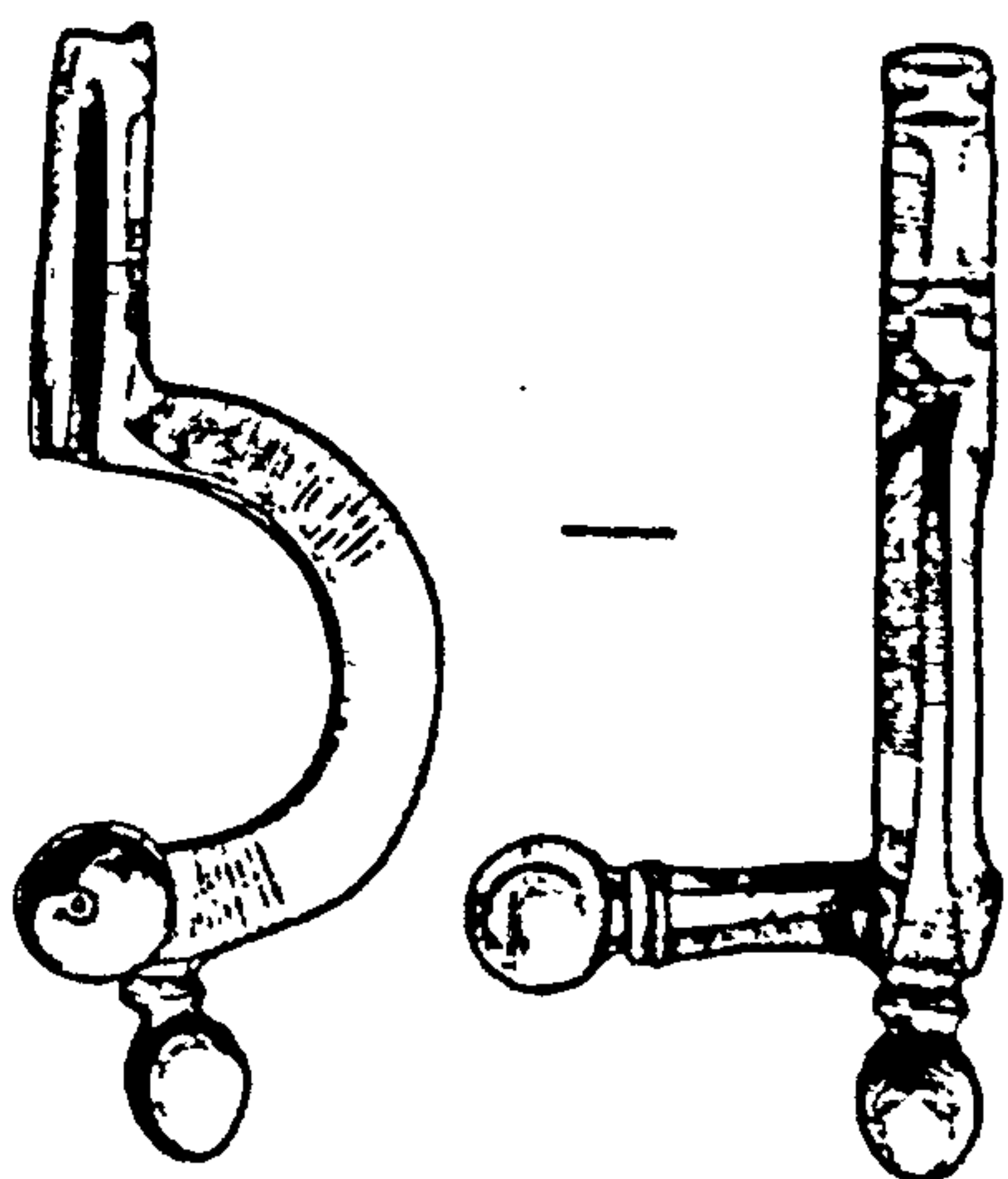


Odiham  
Brailsford 1951 fig.10 28

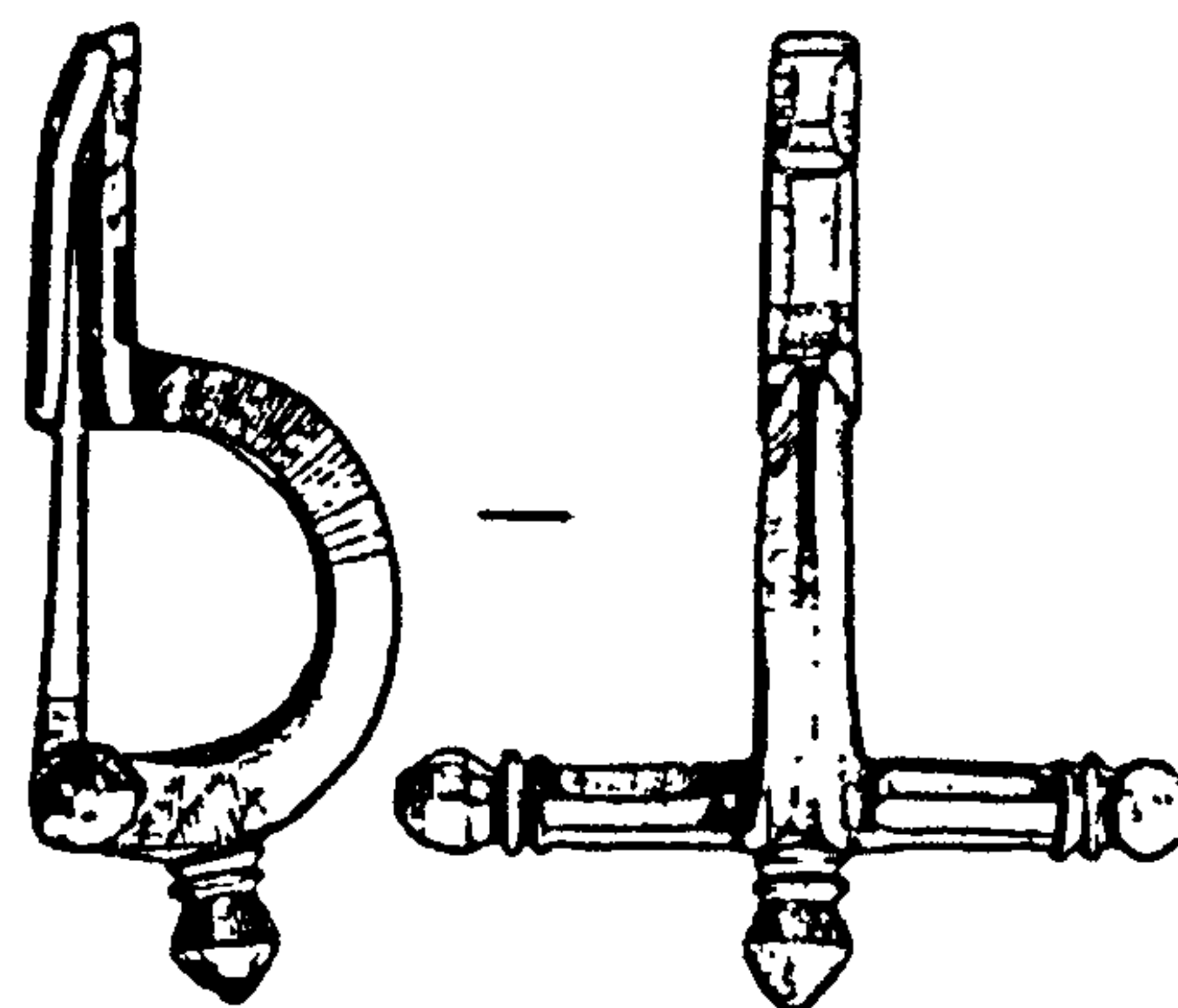
at varying scales



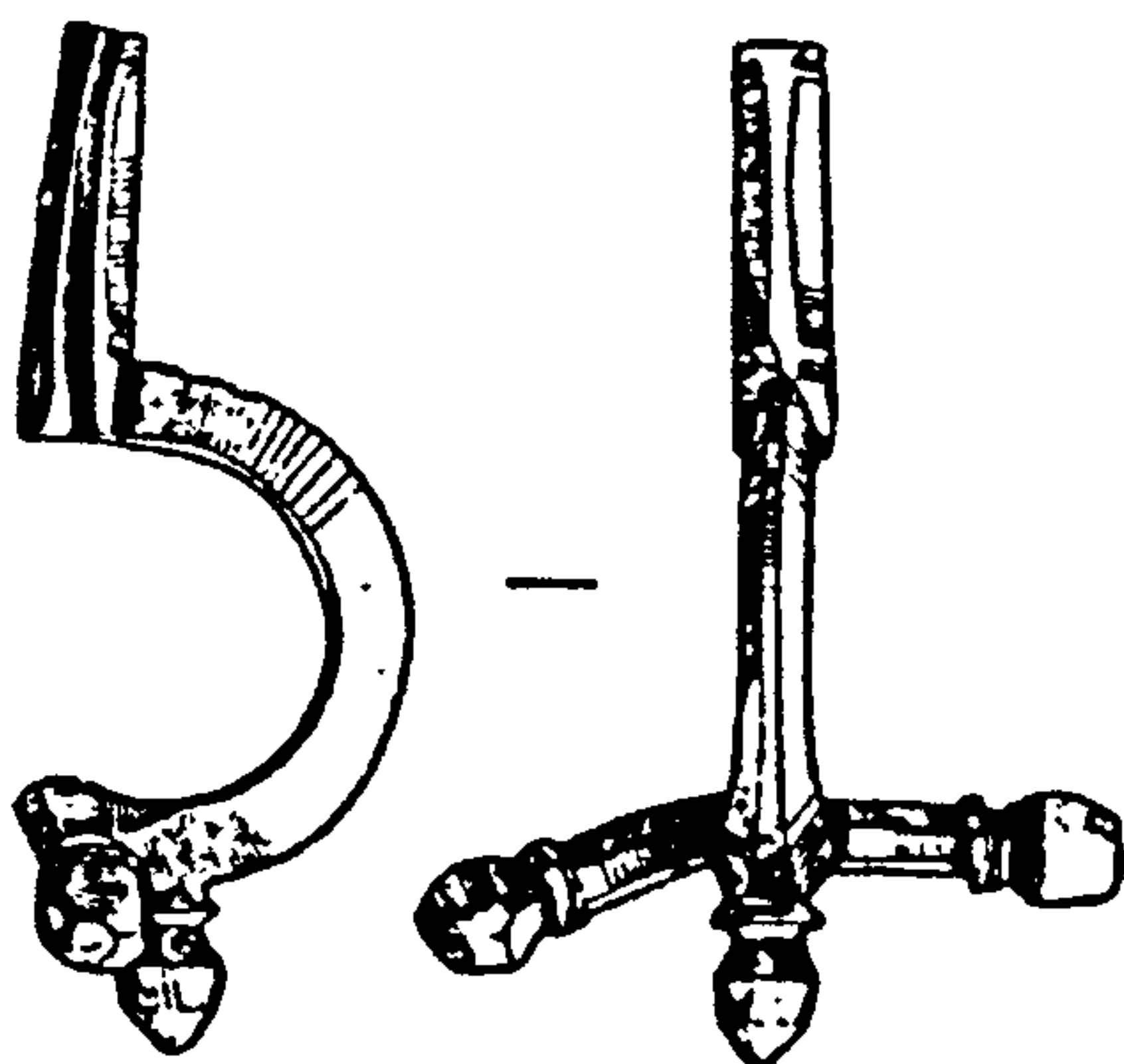
Crossbow brooches from Richborough and Caister-by-Yarmouth



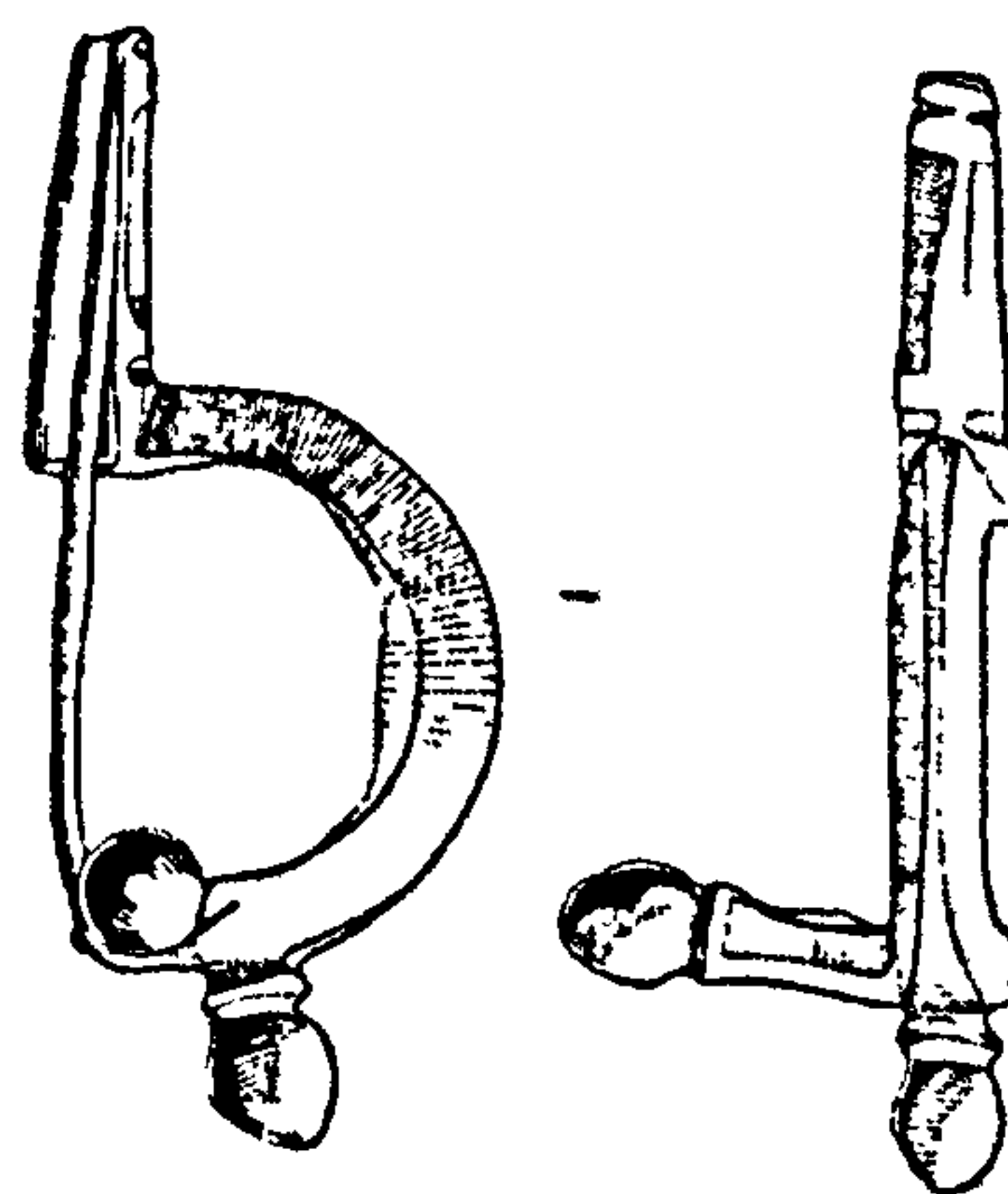
Richborough  
Bayley et al forthcoming  
7350478



Richborough  
Bayley et al forthcoming 7351206



Richborough  
Bayley et al forthcoming 7350273



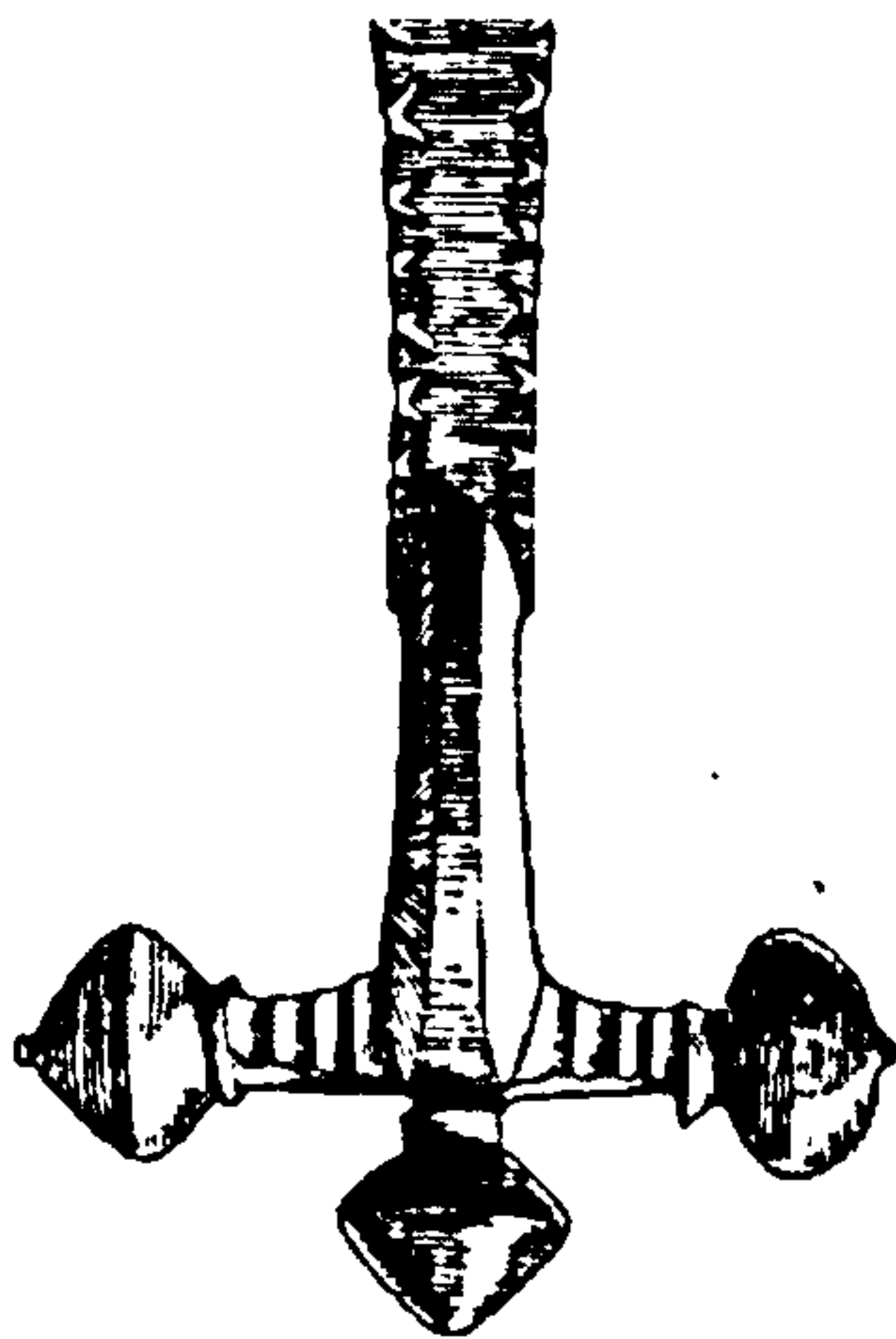
Caister-by-Yarmouth  
Darling & Gurney 1993 SF  
3185 fig.40 8

at varying scales

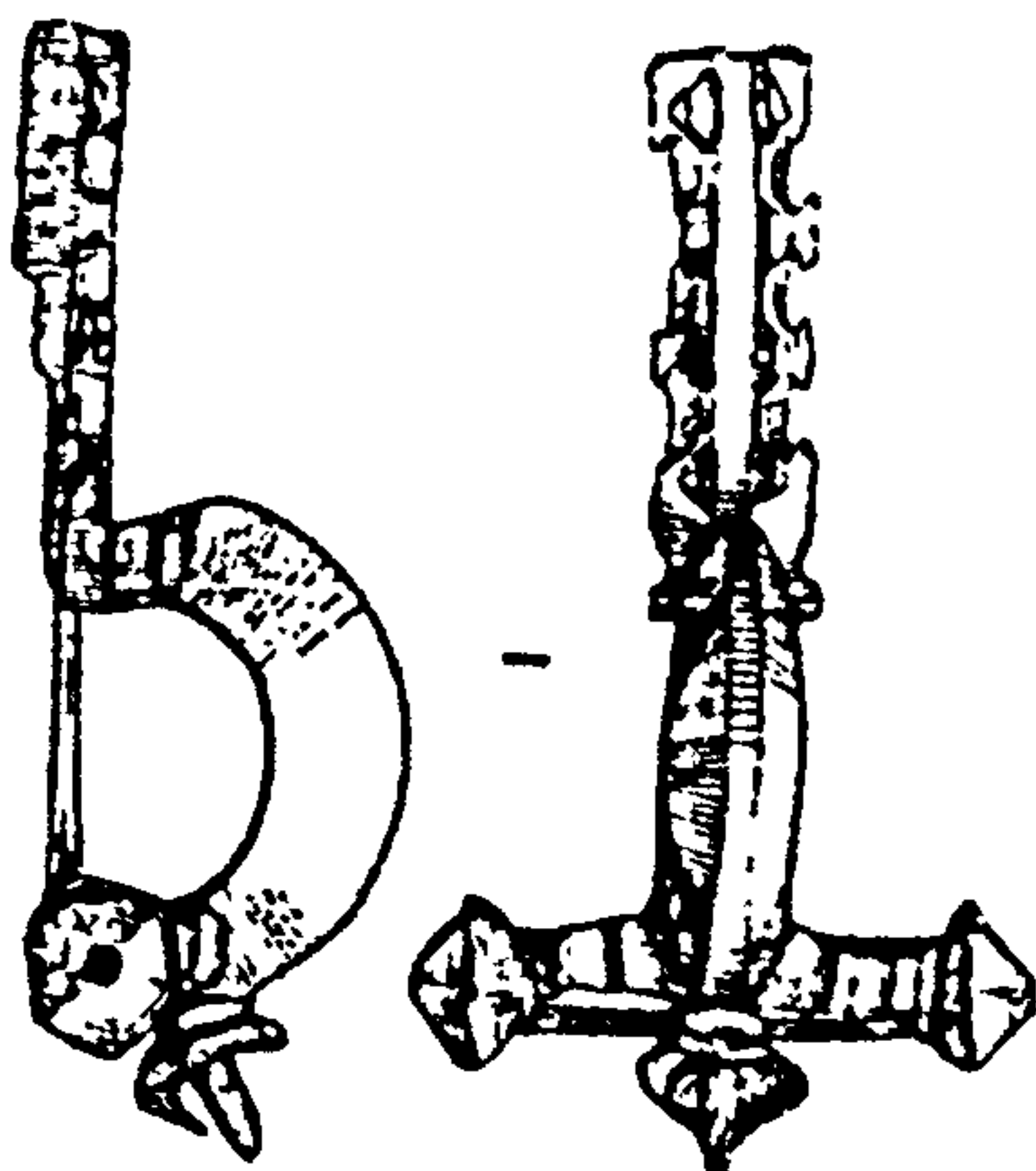


Crossbow brooches from Richborough and Caister-by-Yarmouth

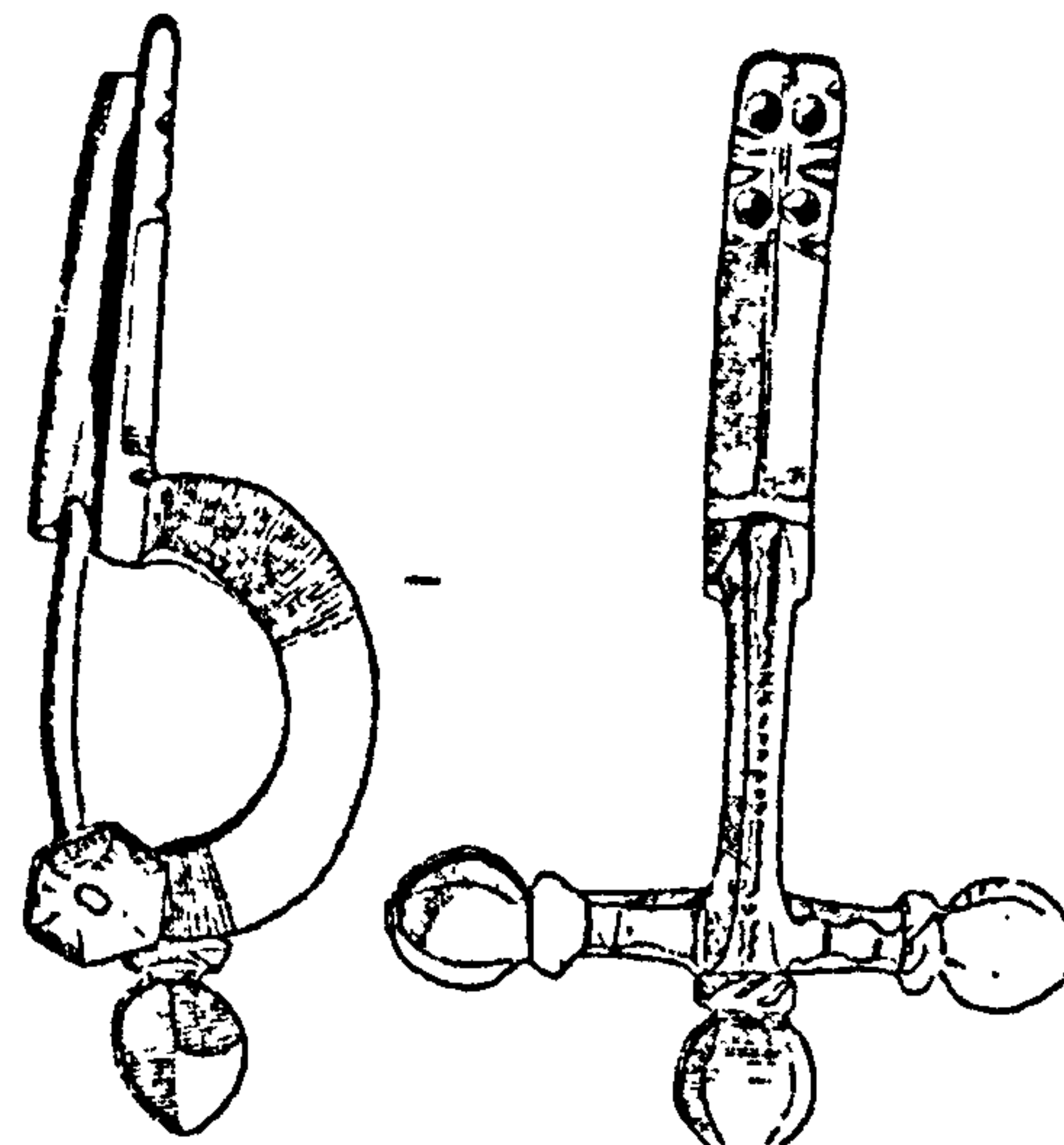
Richborough  
Bayley et al forthcoming 7351227



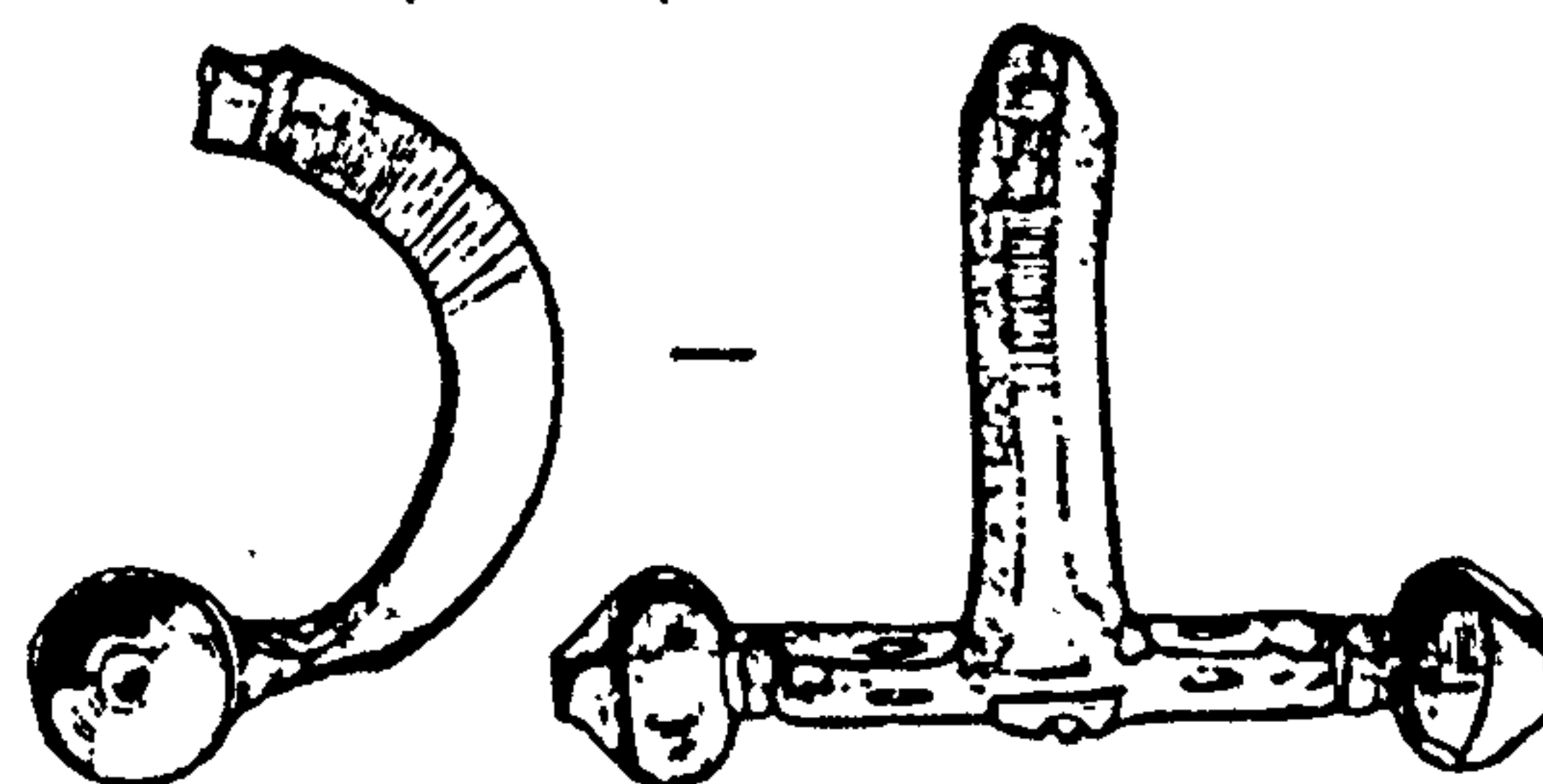
Richborough  
Bayley et al forthcoming 7351707



Richborough  
Bayley et al forthcoming 7351227



Caister-by-Yarmouth  
Darling & Gurney 1993 SF 980 1951-5 fig.41  
11

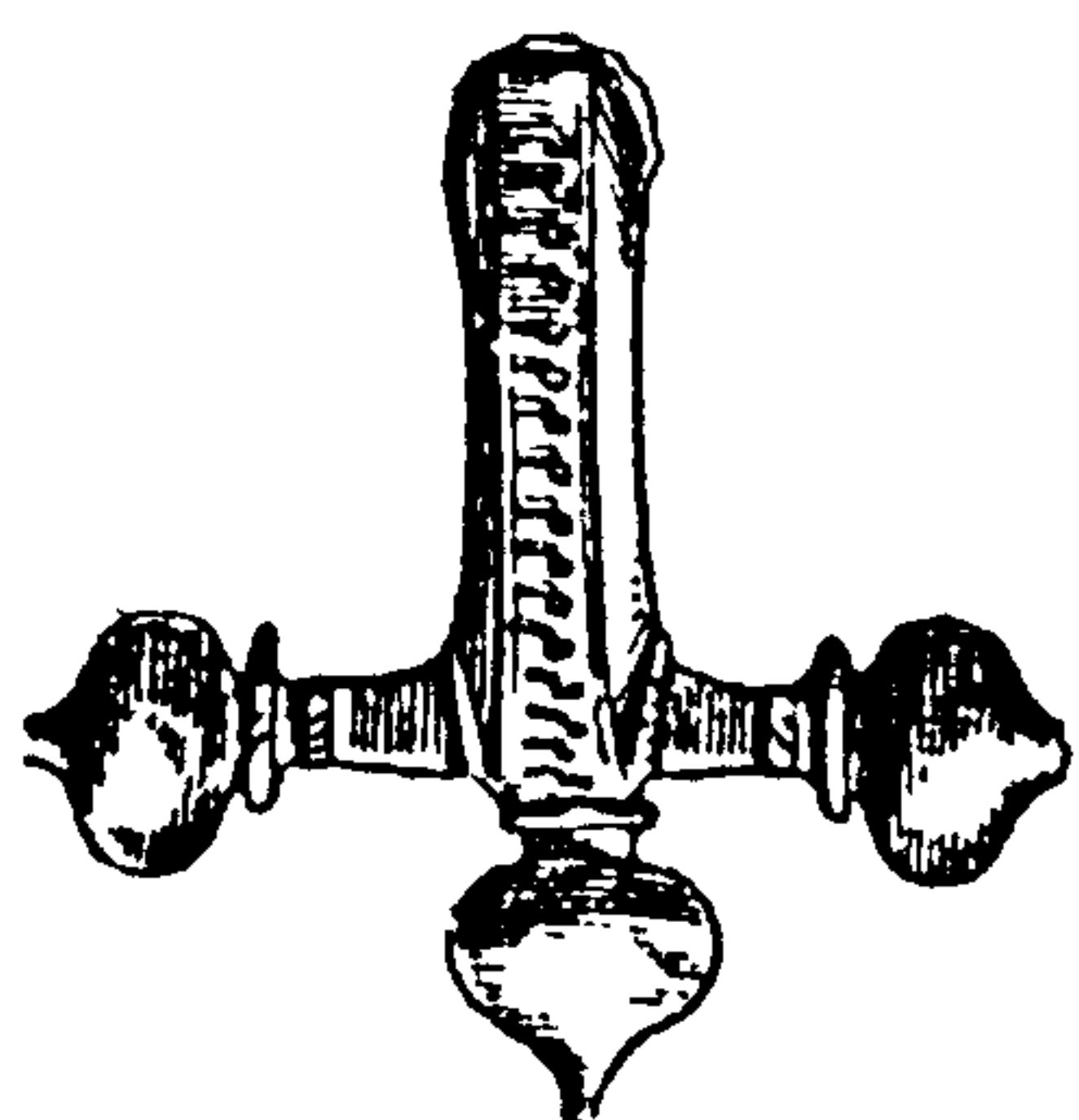


Richborough  
Bayley et al forthcoming  
7350090

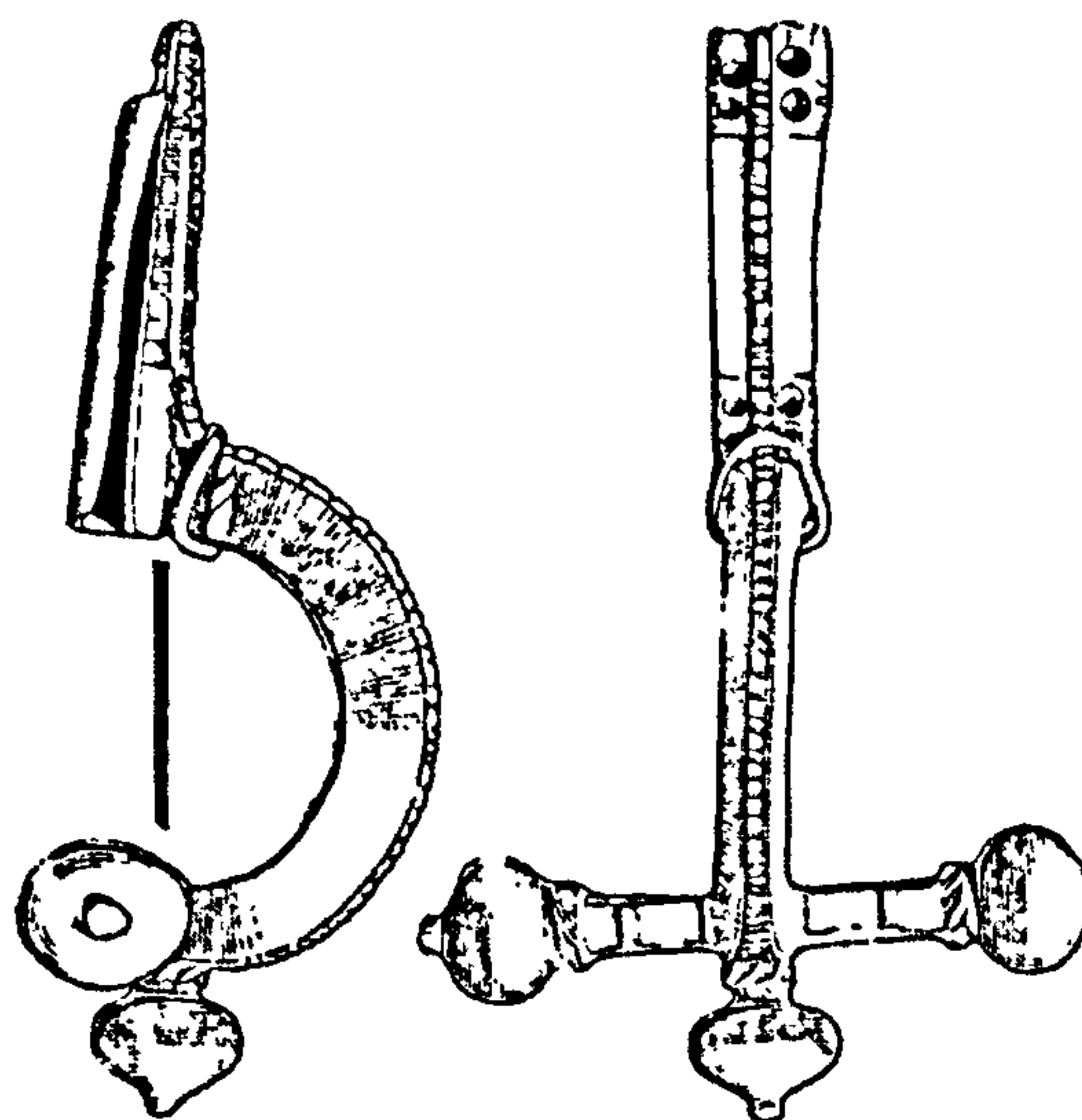
at varying scales



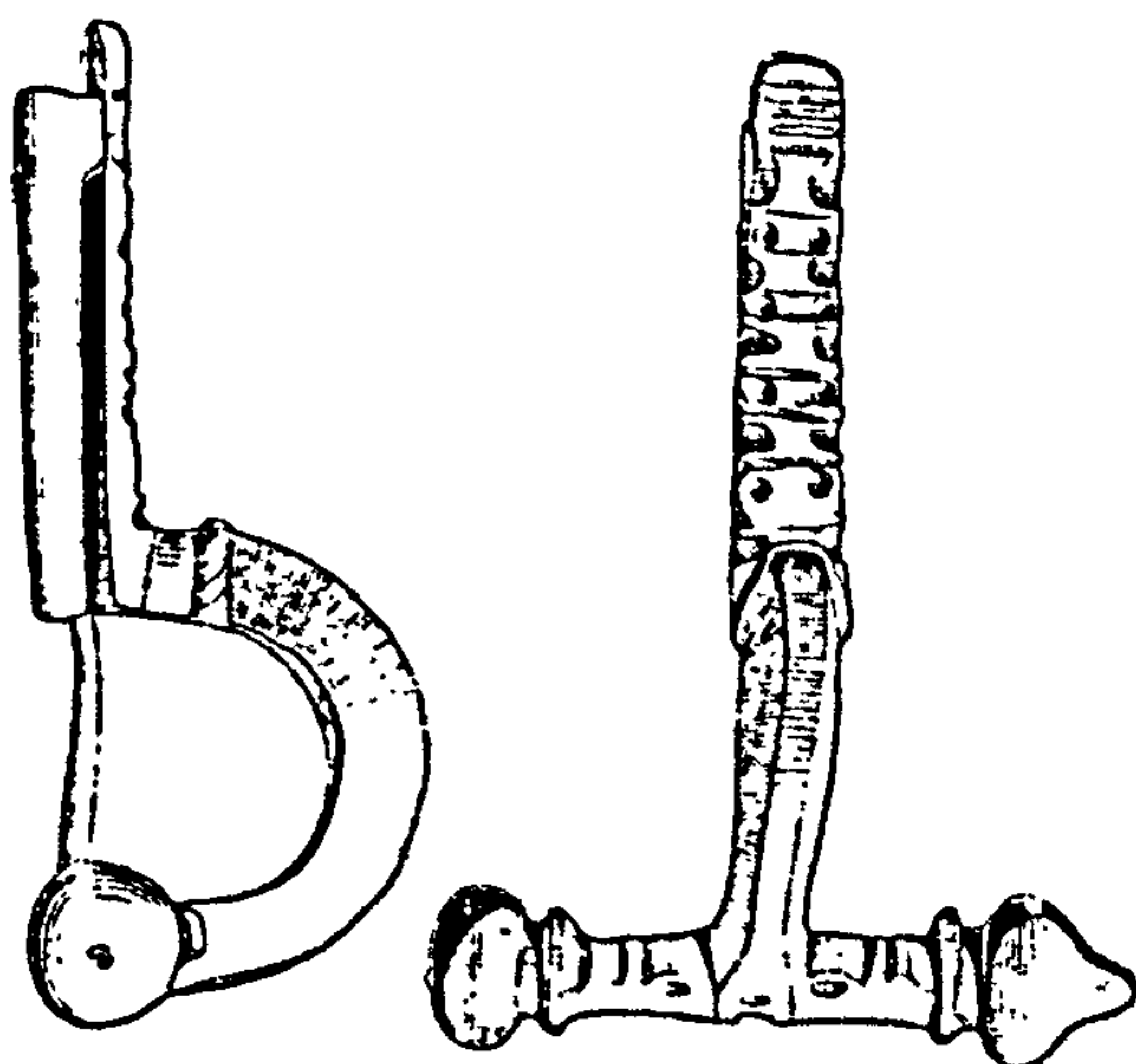
Crossbow brooches from Richborough and Caister-by-Yarmouth



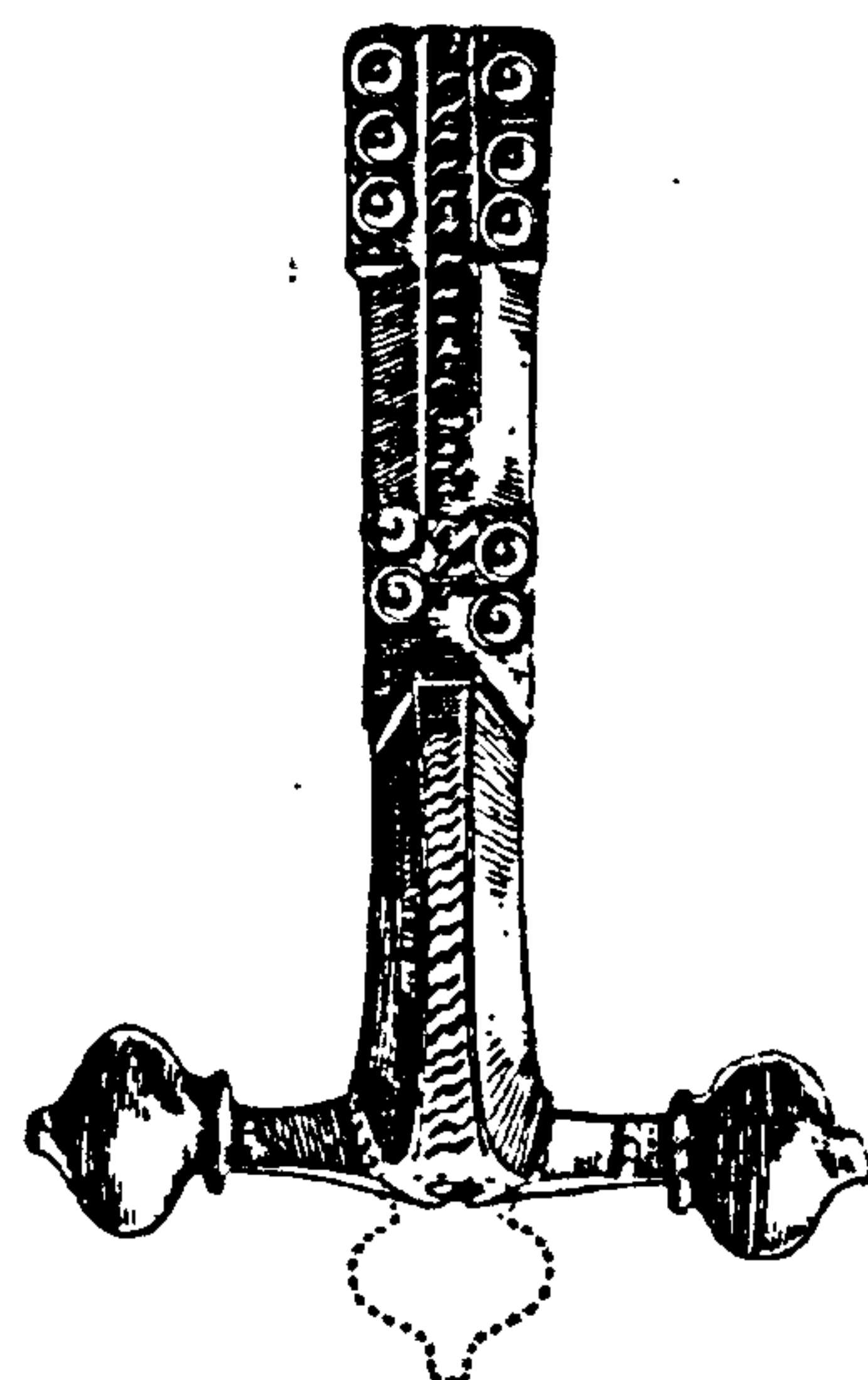
Richborough  
Bayley et al forthcoming 7350697



Caister-by-Yarmouth  
Darling & Gurney 1993 SF 1039 fig.41  
10



Caister-by-Yarmouth  
Darling & Gurney 1993 SF 2386  
fig.41 9

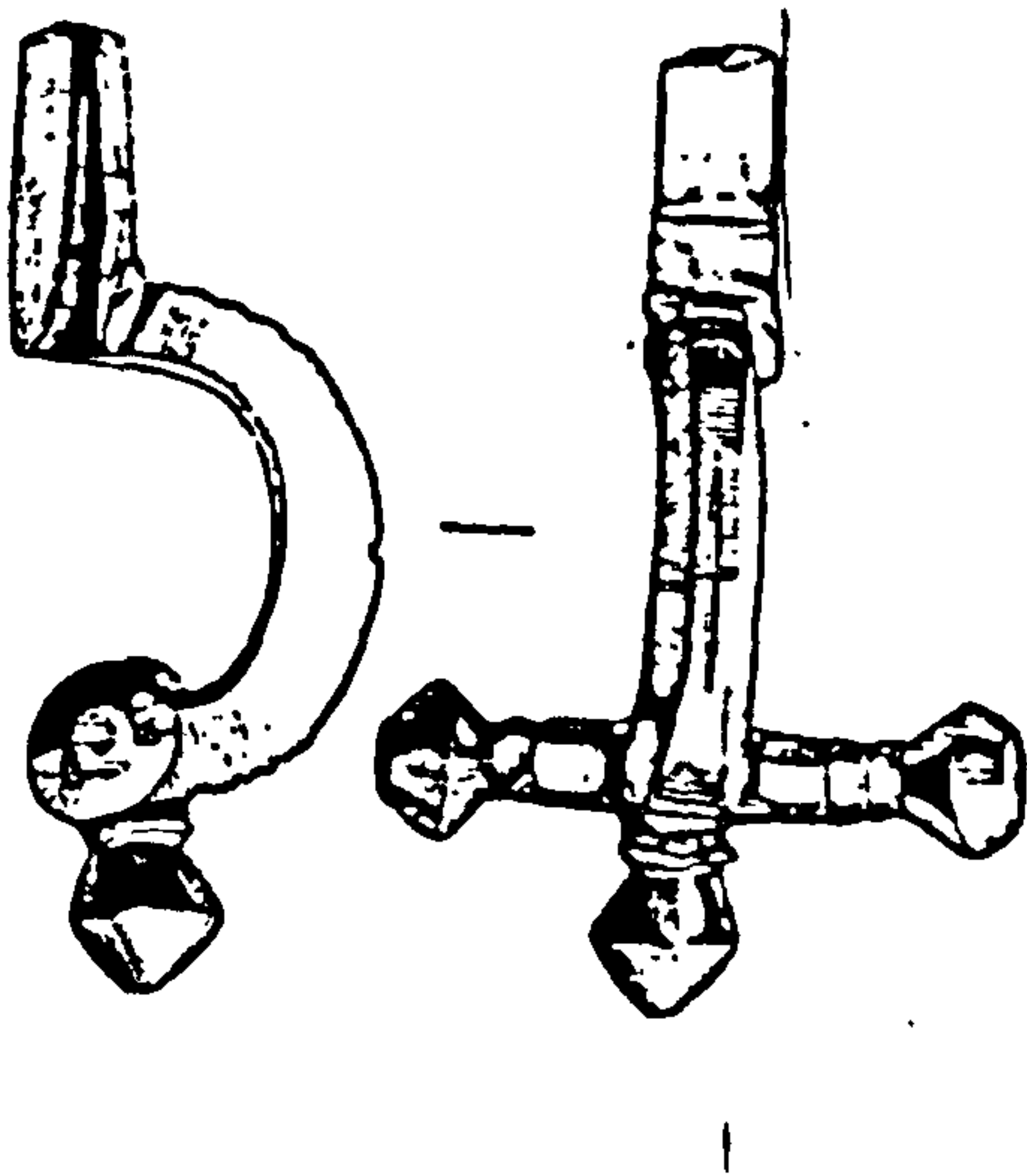


Richborough  
Bayley et al forthcoming 7351700

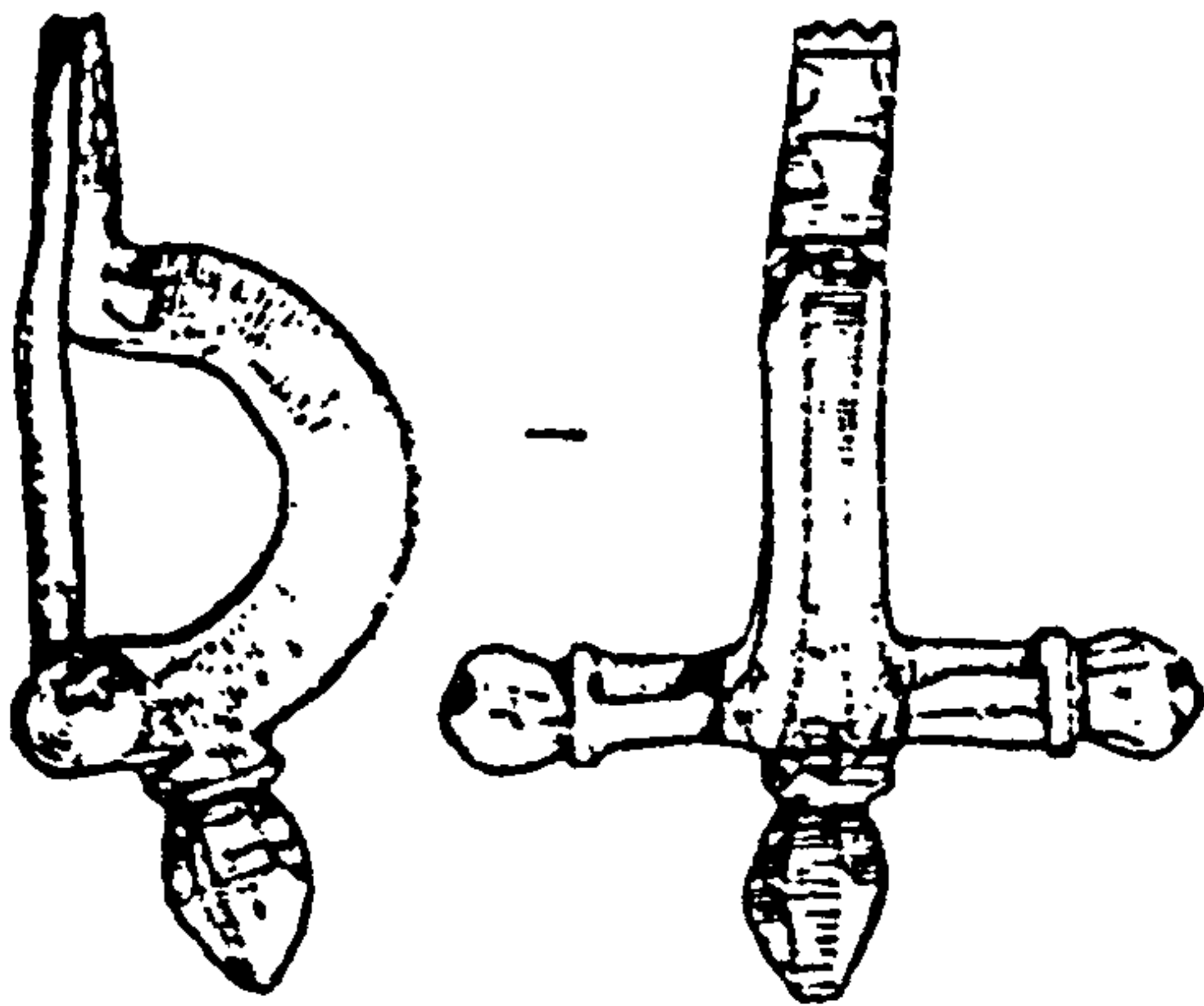
at varying scales



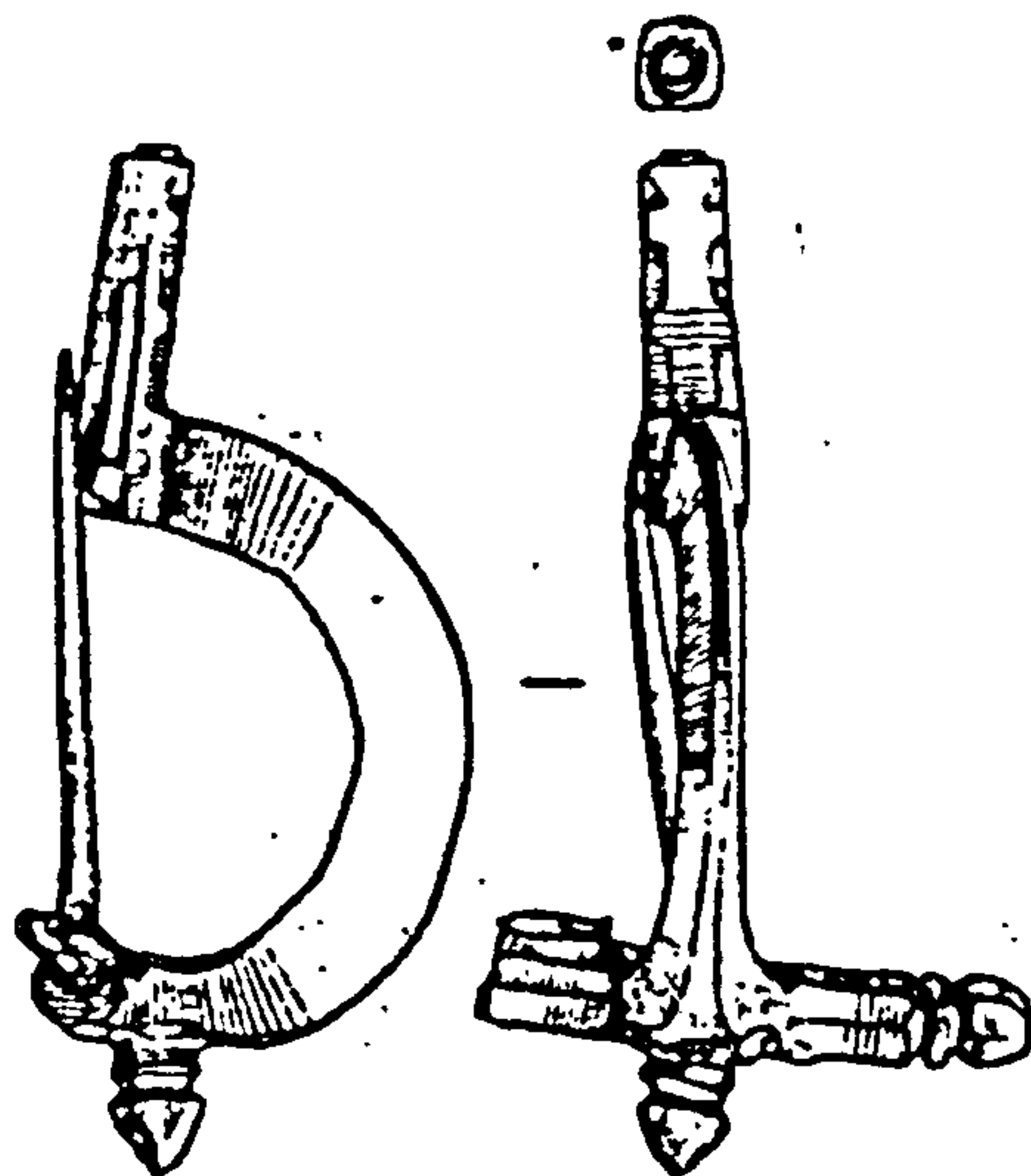
Crossbow brooches from Richborough



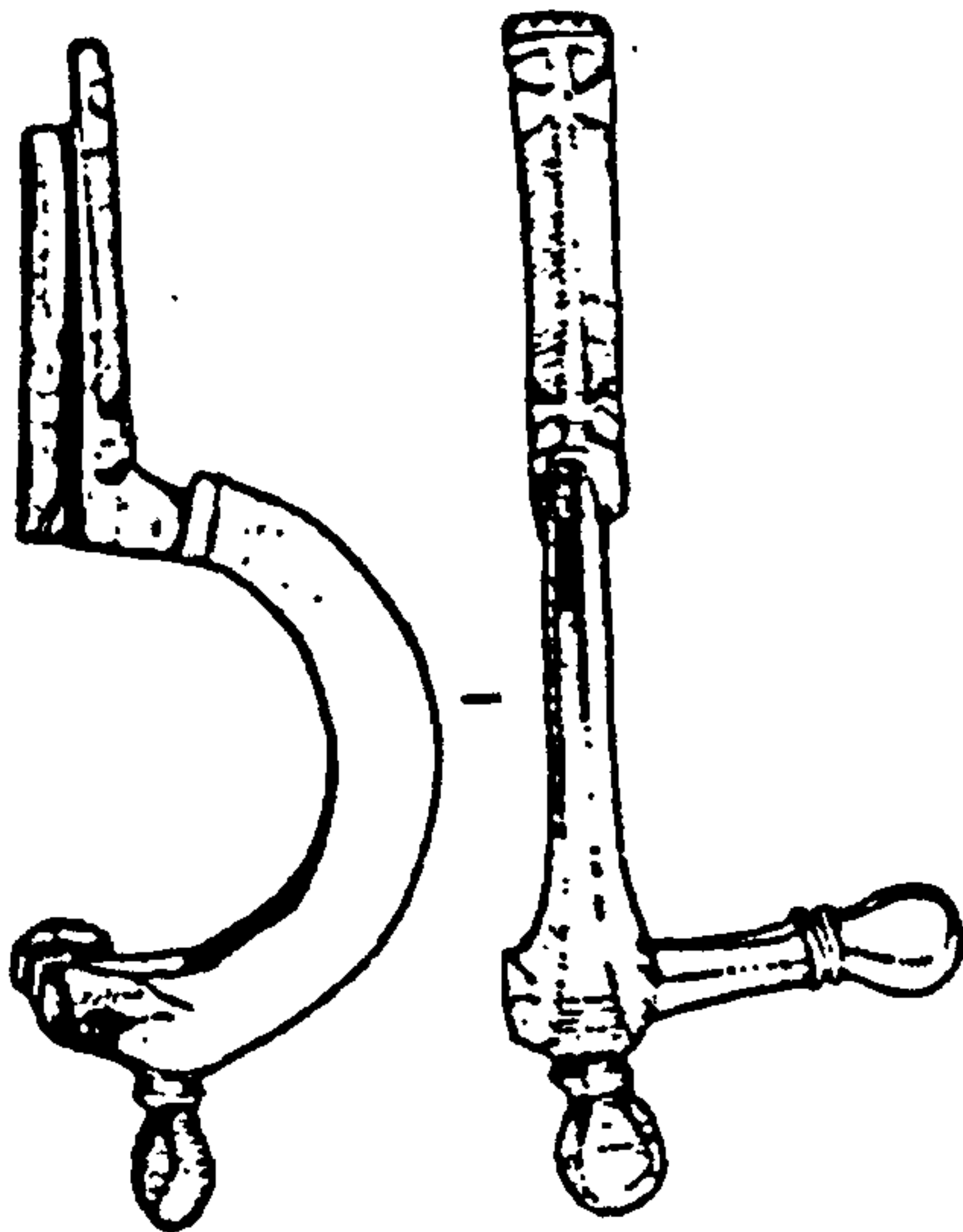
Richborough  
Bayley et al forthcoming 7350275



Richborough  
Bayley et al forthcoming 7350097



Richborough  
Bayley et al forthcoming  
7350052

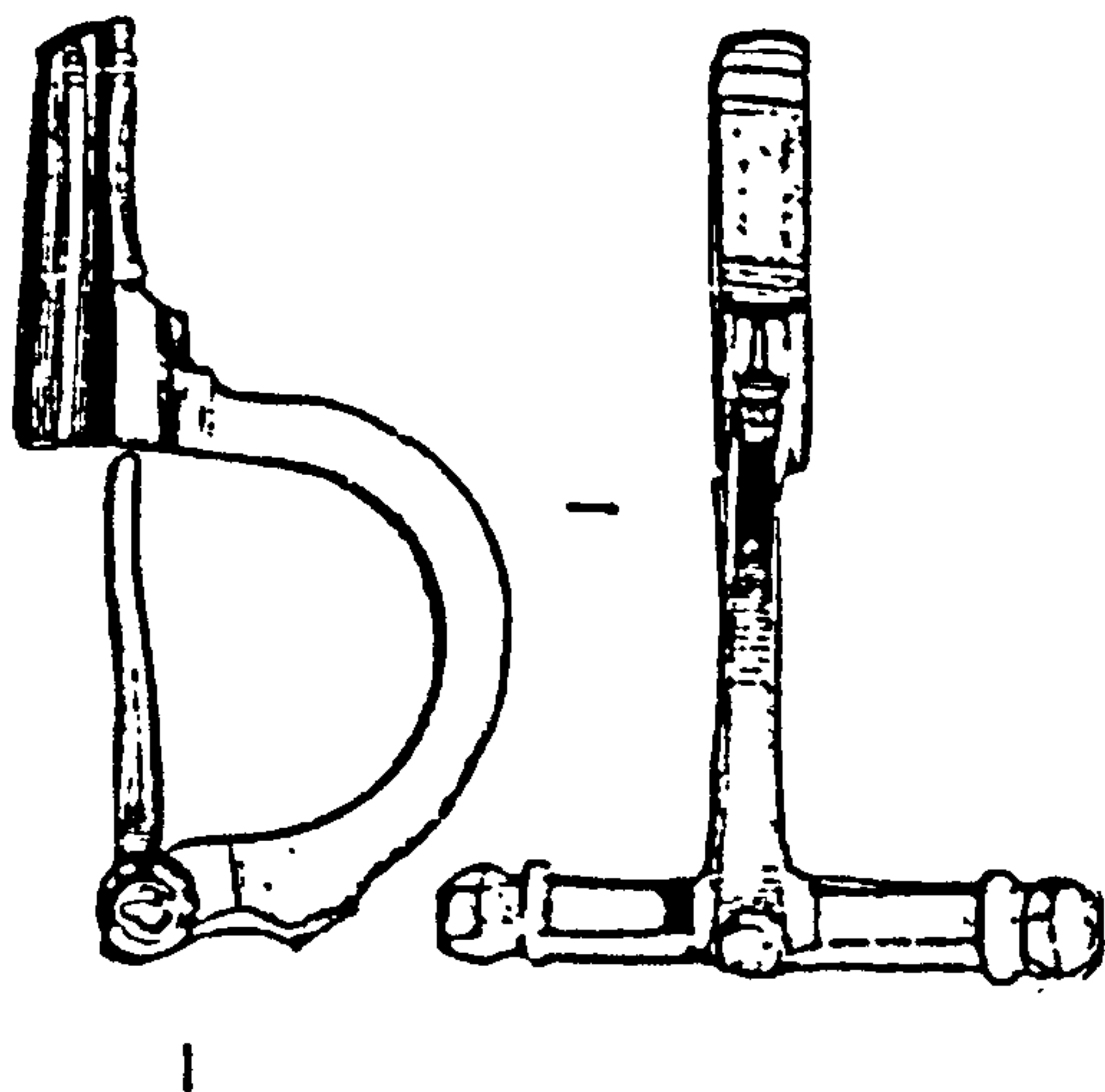


Richborough  
Bayley et al forthcoming 7350272

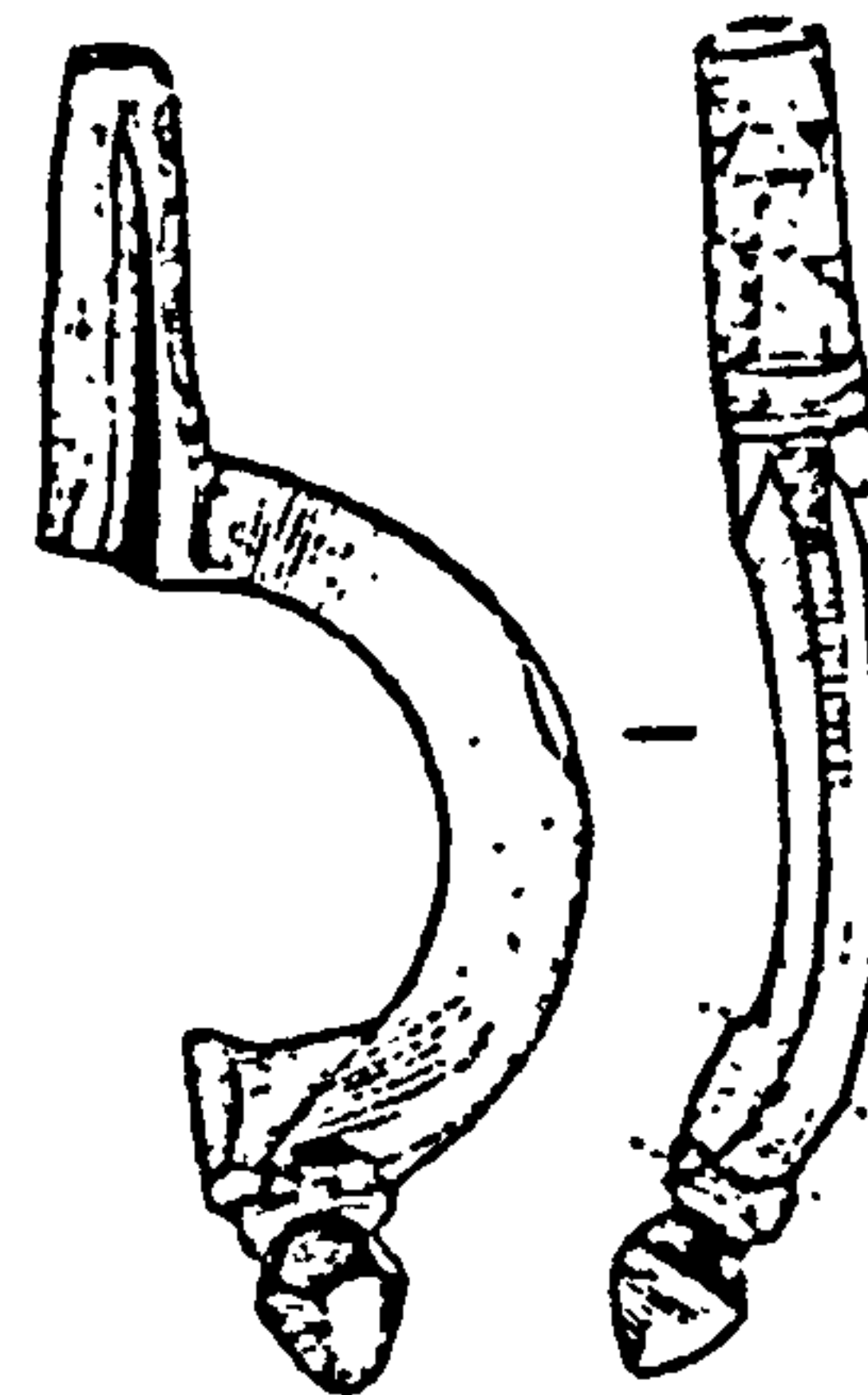
at varying scales



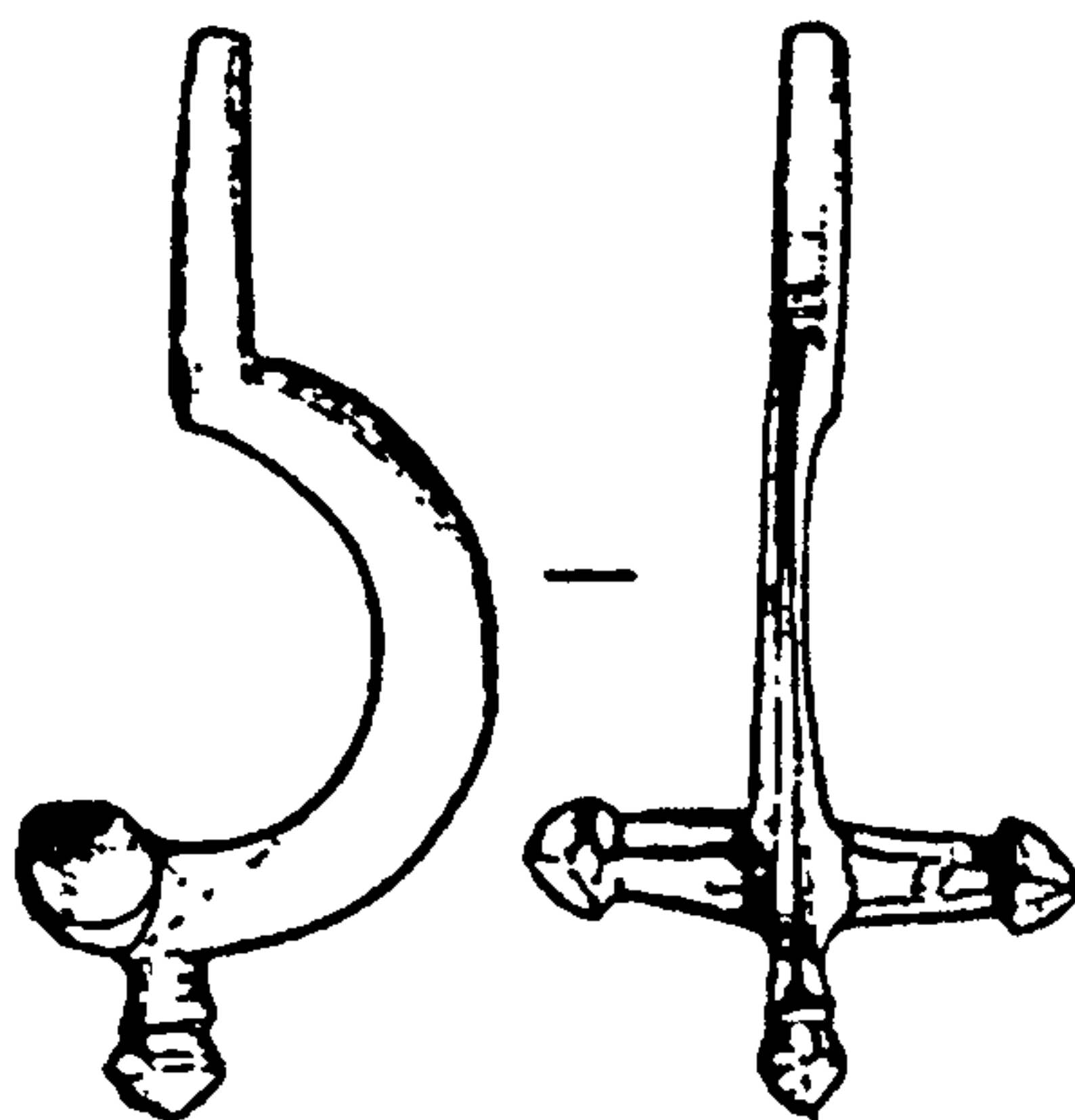
Crossbow brooches from Richborough



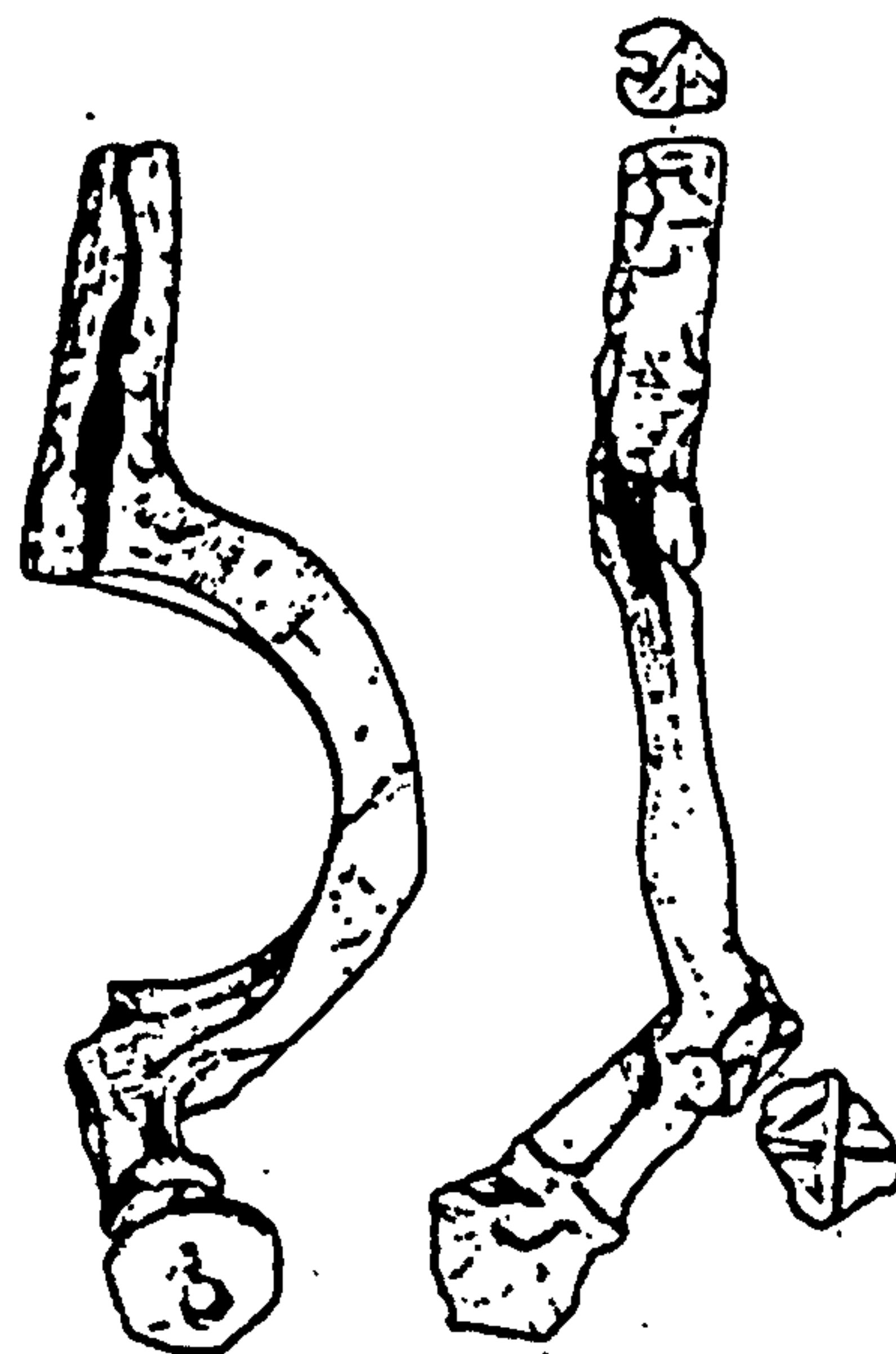
Richborough  
Bayley et al forthcoming 7351702



Richborough  
Bayley et al forthcoming 7350069



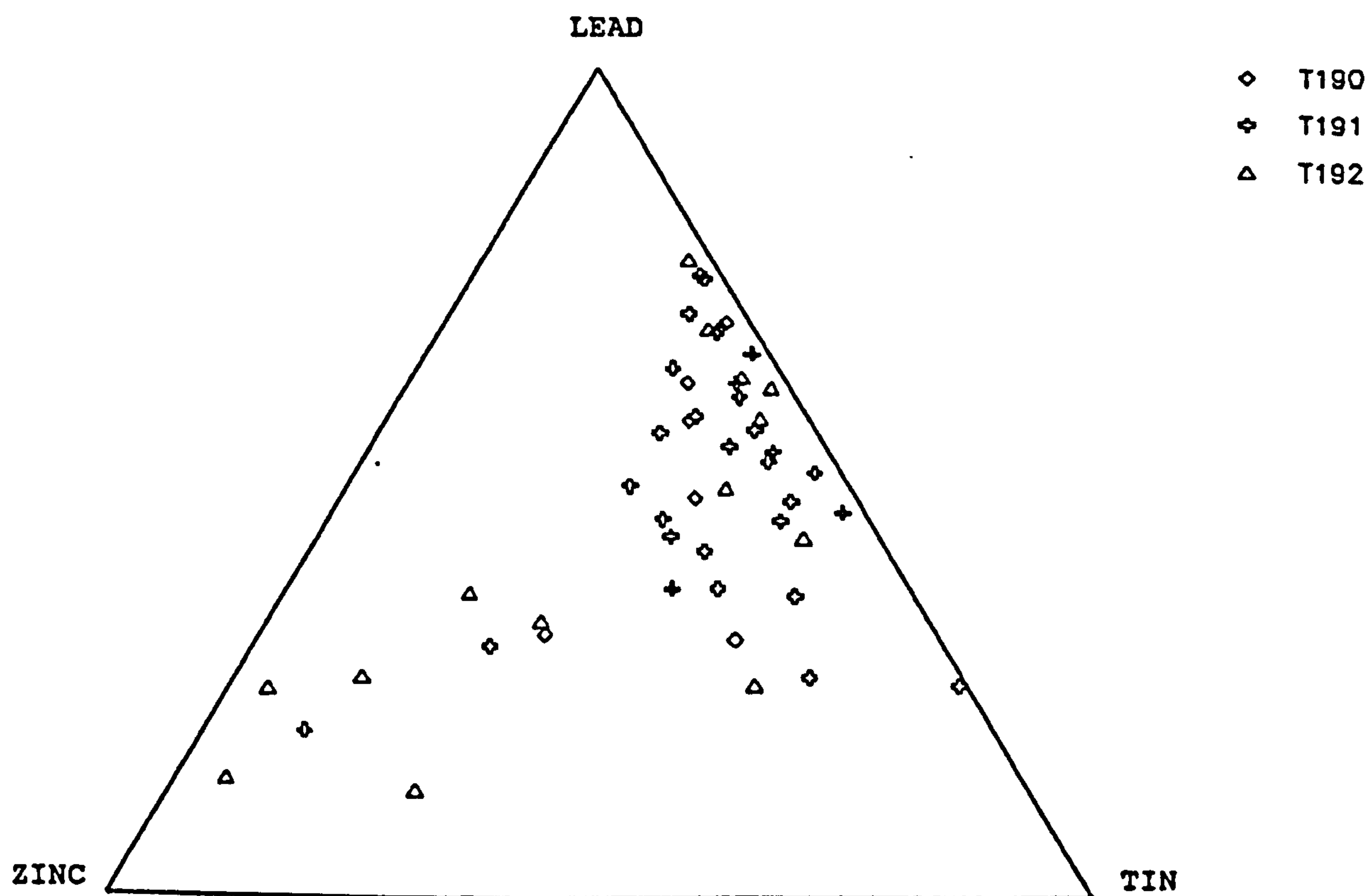
Richborough  
Bayley et al forthcoming  
7350297



Richborough  
Bayley et al forthcoming 7350500

at varying scales





**Ternary diagram of AAS analyses of crossbow brooches  
(T190-T192) with lead >2%**

Bayley 1992 fig.10.33



Short biconical beads



Spherical beads



Cylinder beads with round section



Cylinder beads with square section



Long cylinder beads with hexagonal section



Beads with square section and diamond shaped facets



Segmented cylinder beads



Spherical segmented beads



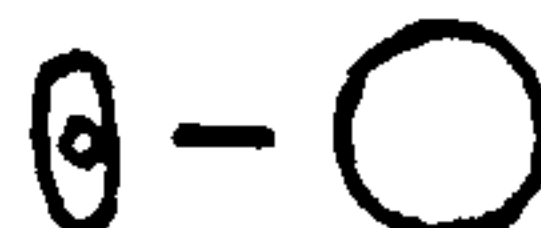
Heart shaped beads, diamond shaped in section



Convex cylindrical beads



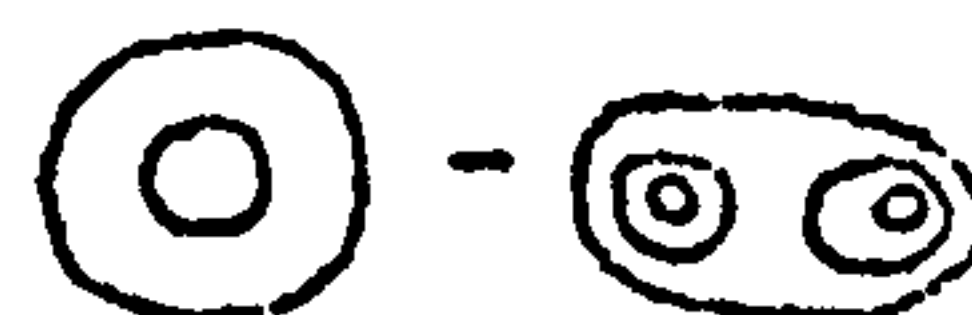
Flat round or cylindrical beads



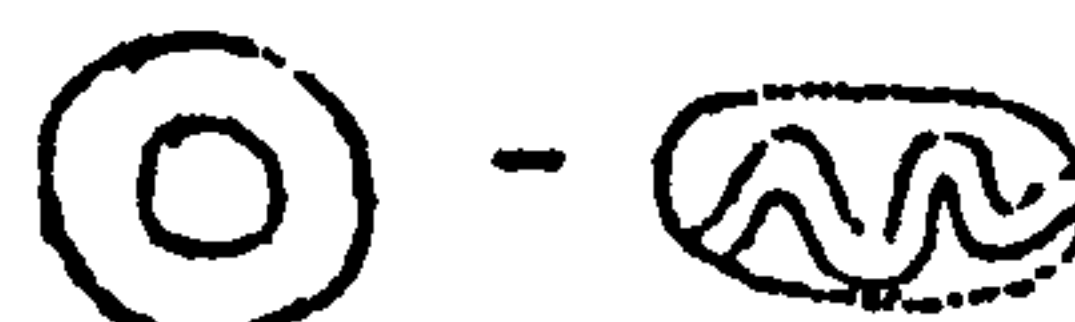
Annular beads with double swag and eyes



Annular beads with eyes



Annular beads with single scrabble or wave



Long cylinder beads with feather trail





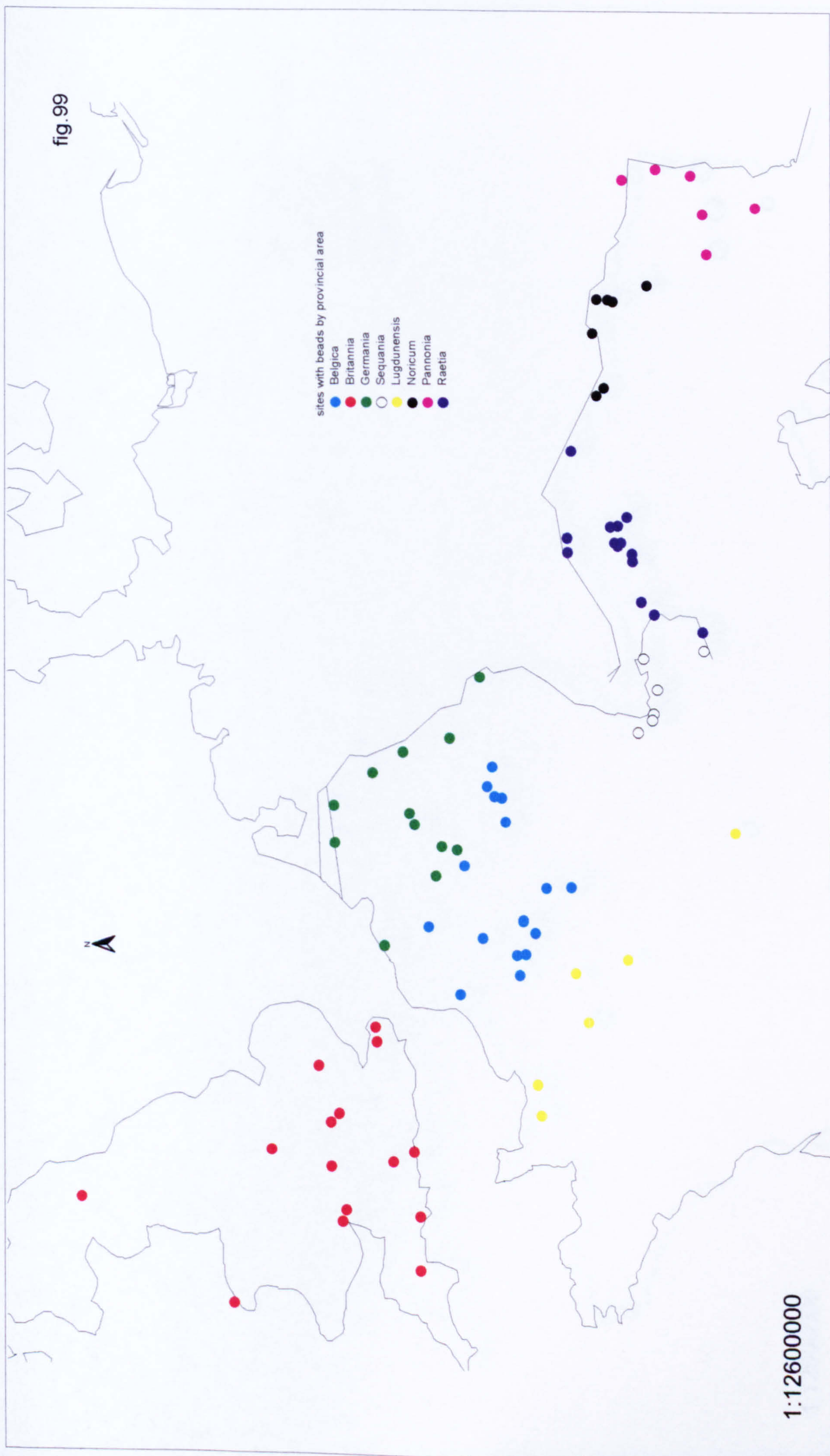


fig.99



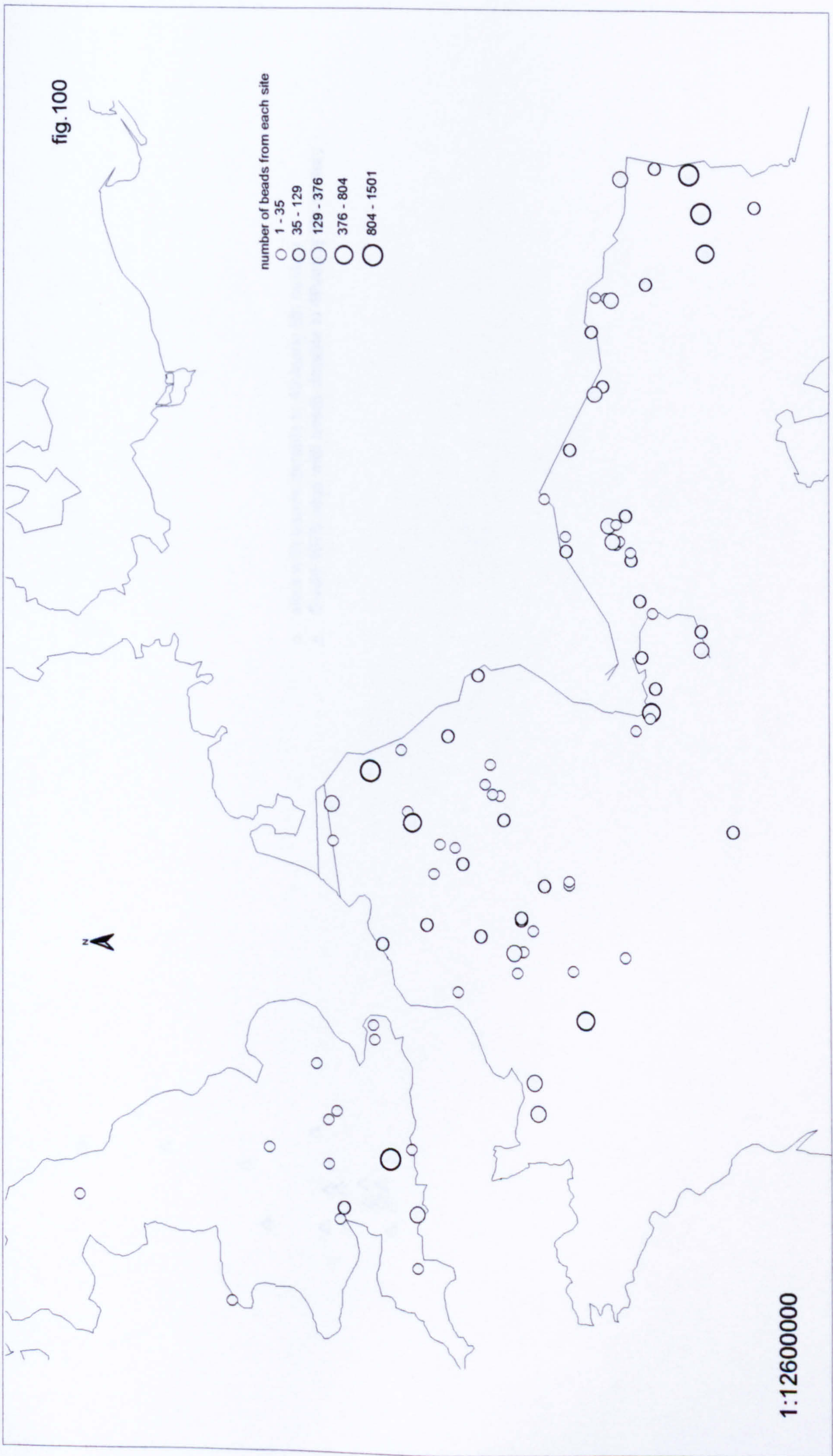


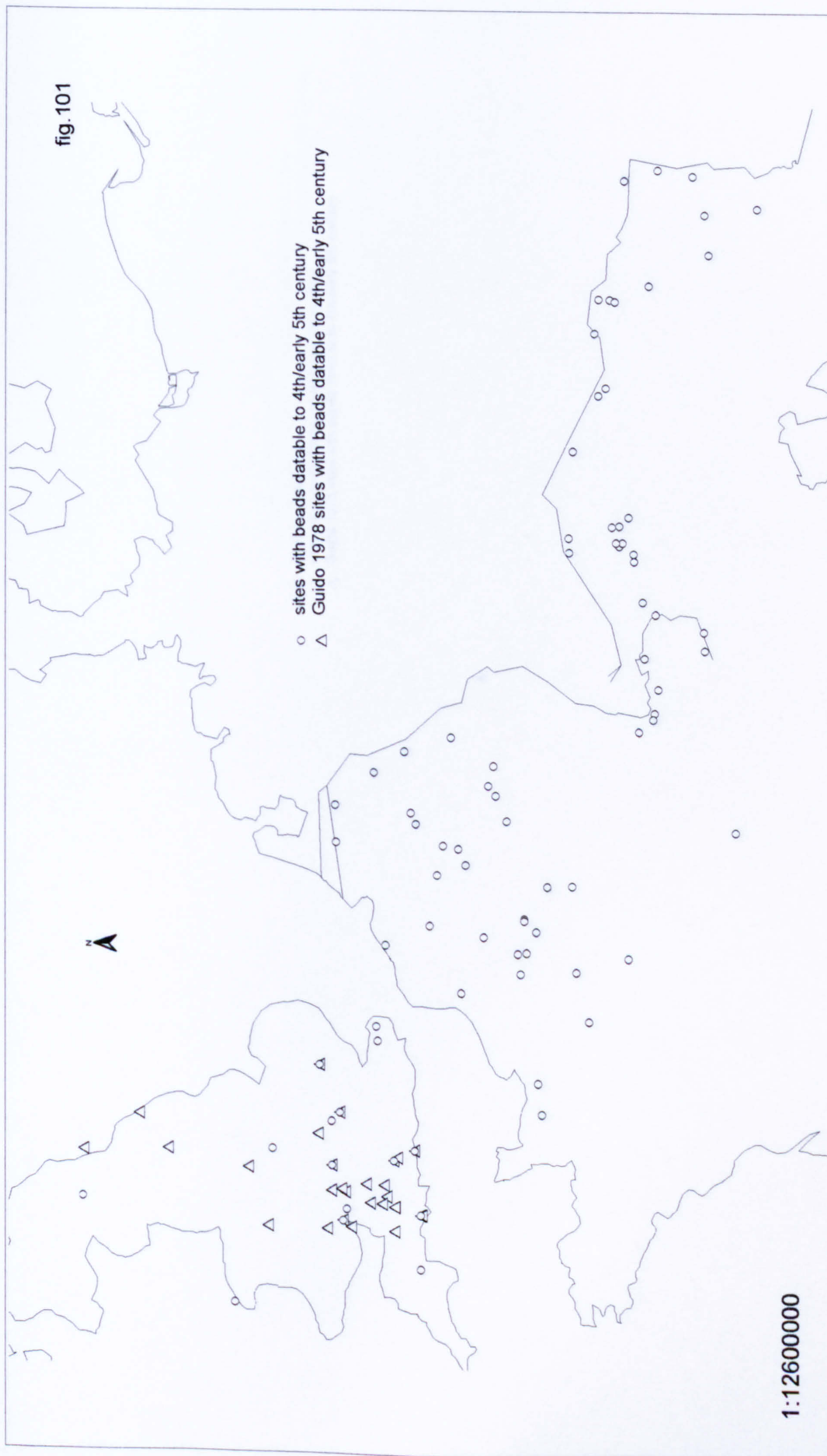
fig. 100

number of beads from each site

- 1 - 35
- 35 - 129
- 129 - 376
- 376 - 804
- 804 - 1501

1:12600000





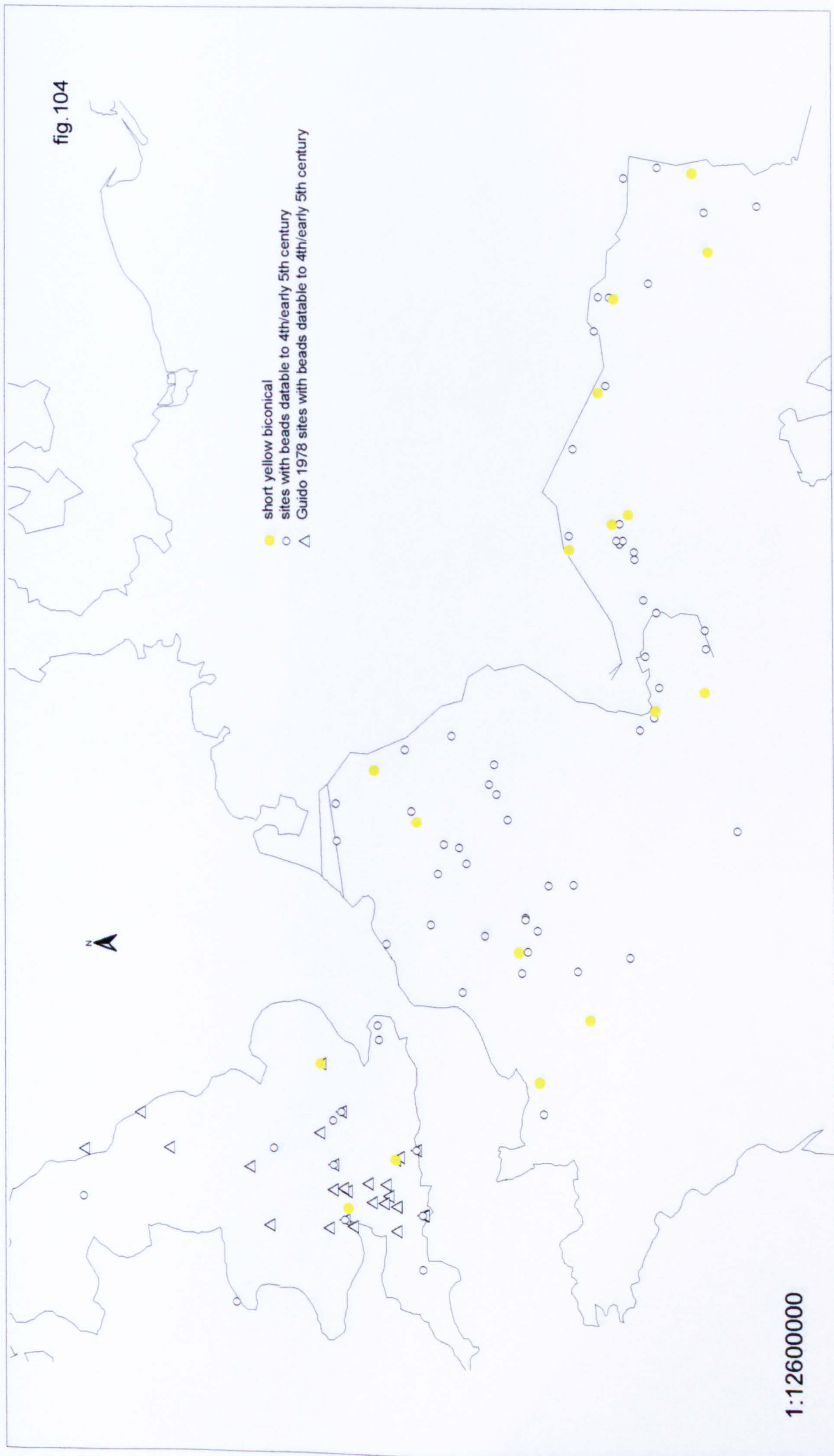














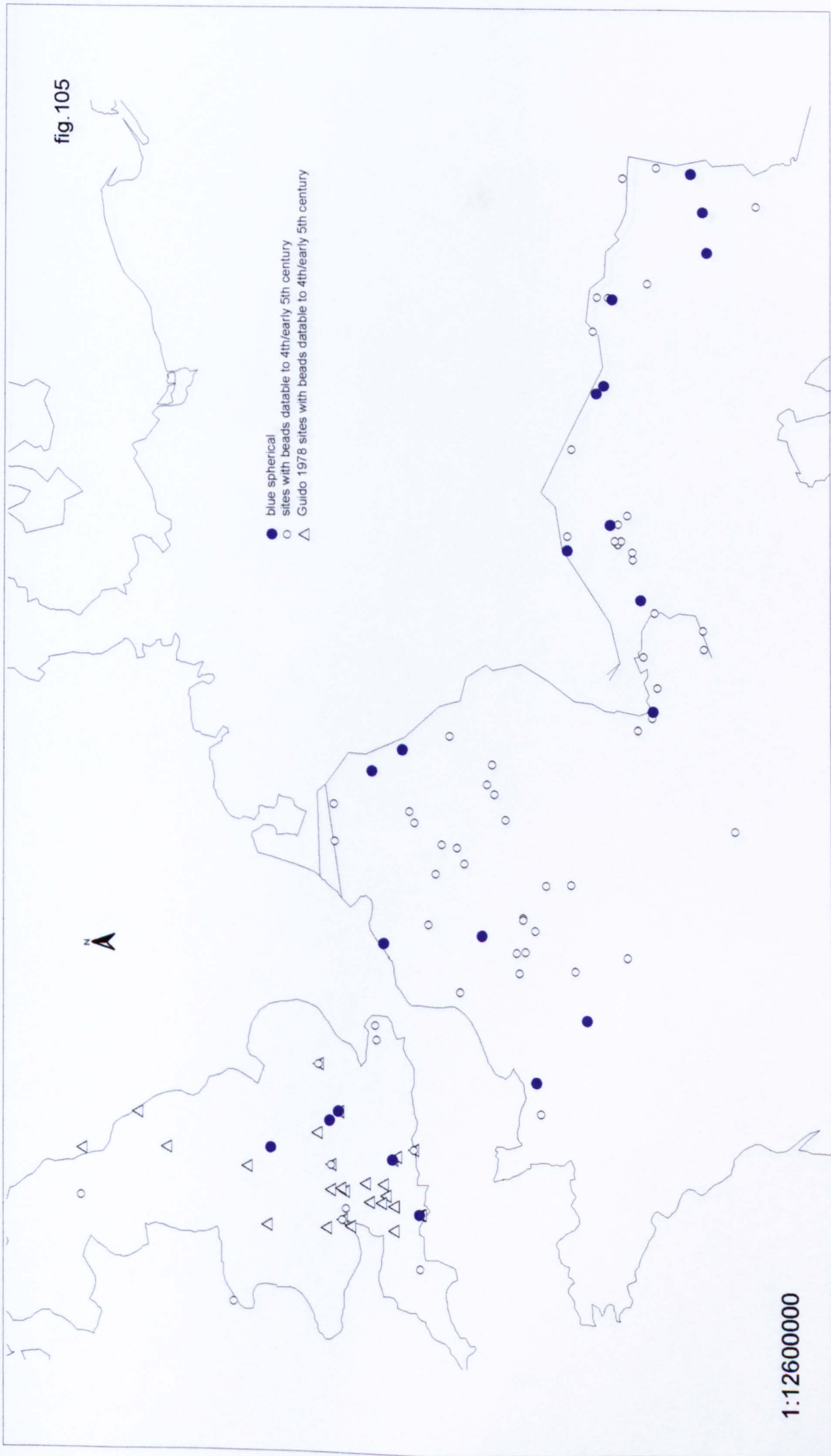


fig.105

1:12600000





fig. 106

- green spherical
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000





fig. 107

- yellow spherical
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



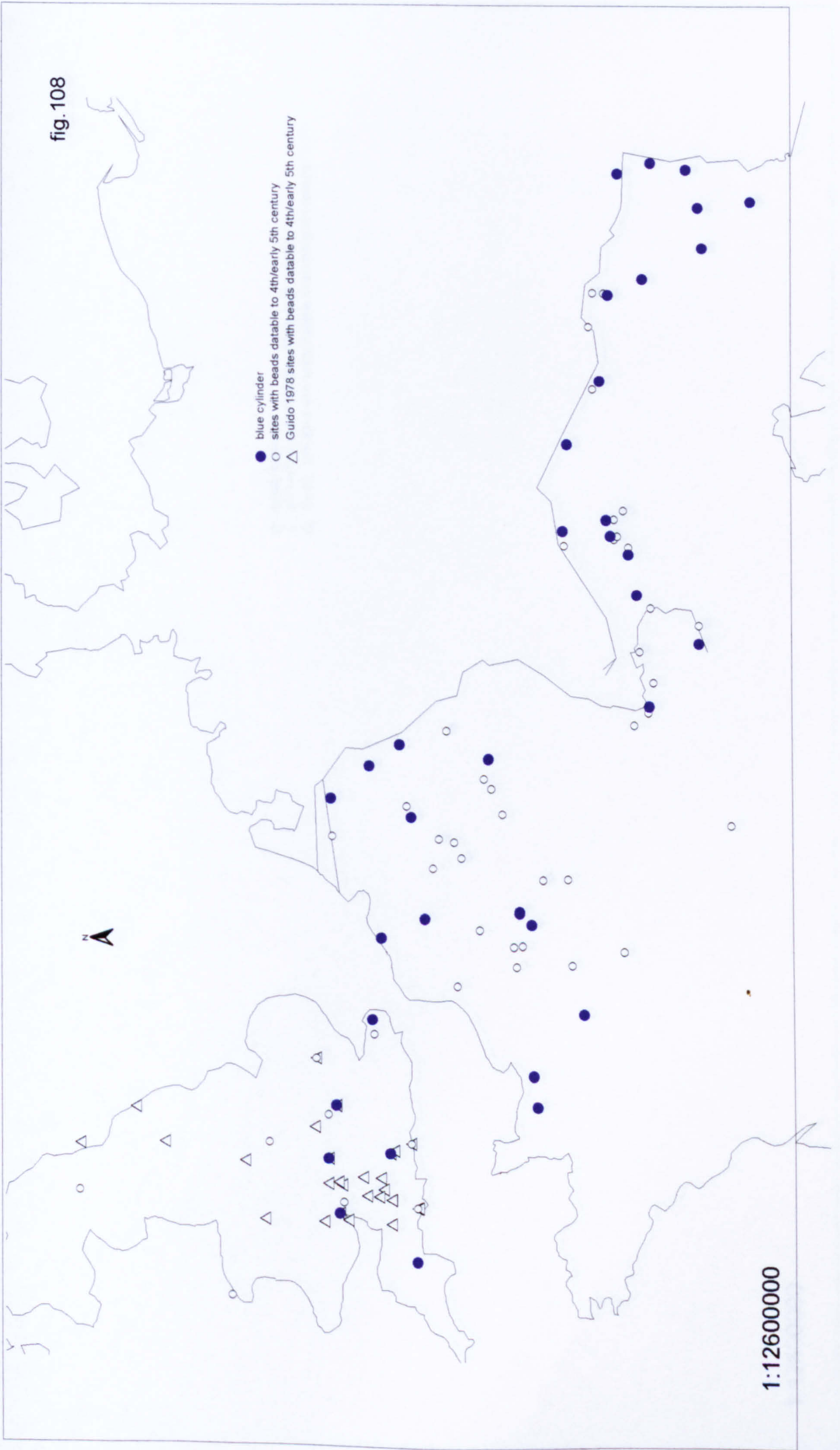






fig. 109

- green cylinder
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



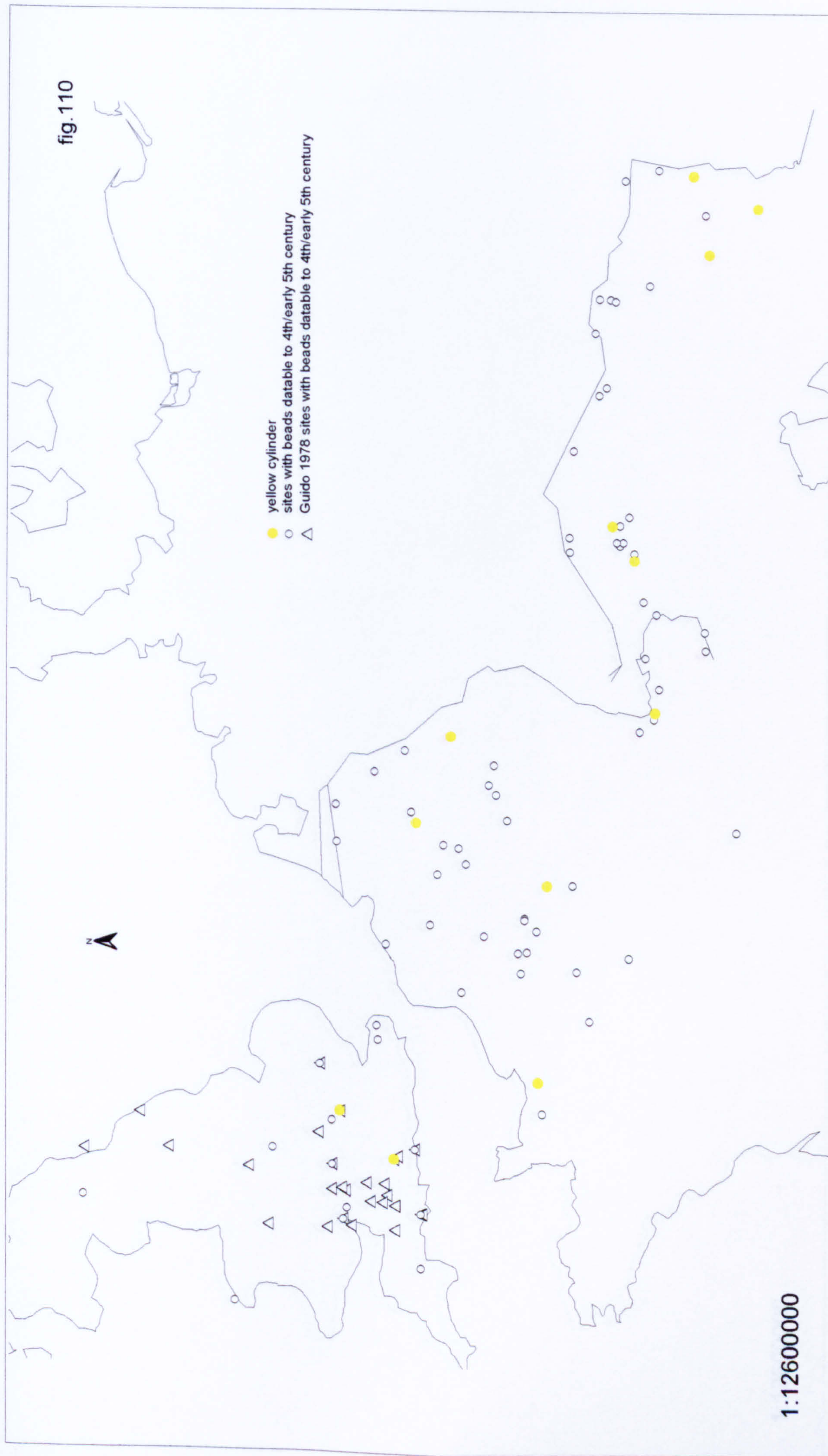


fig. 110

- yellow cylinder
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



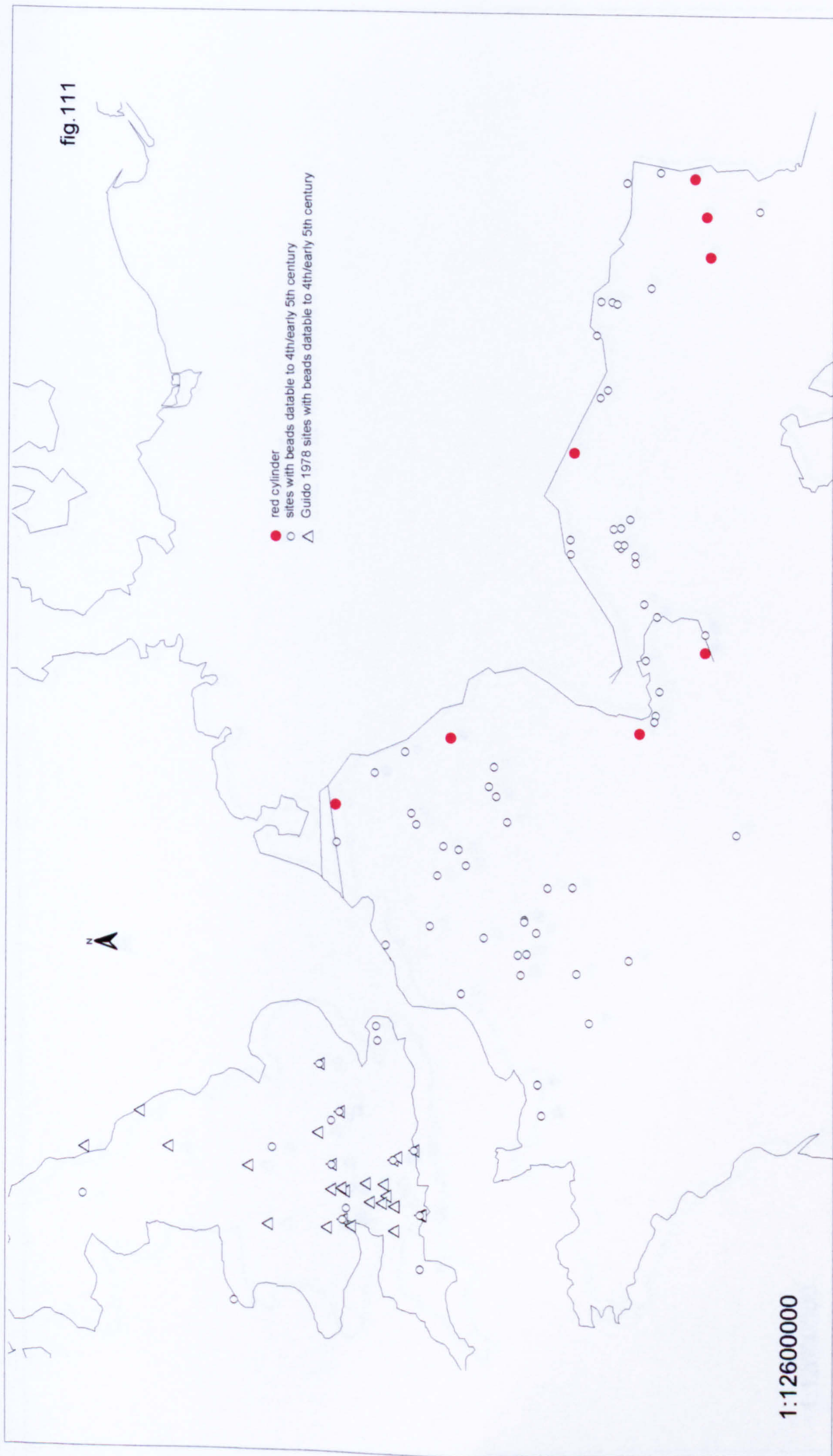


fig.111

- red cylinder
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



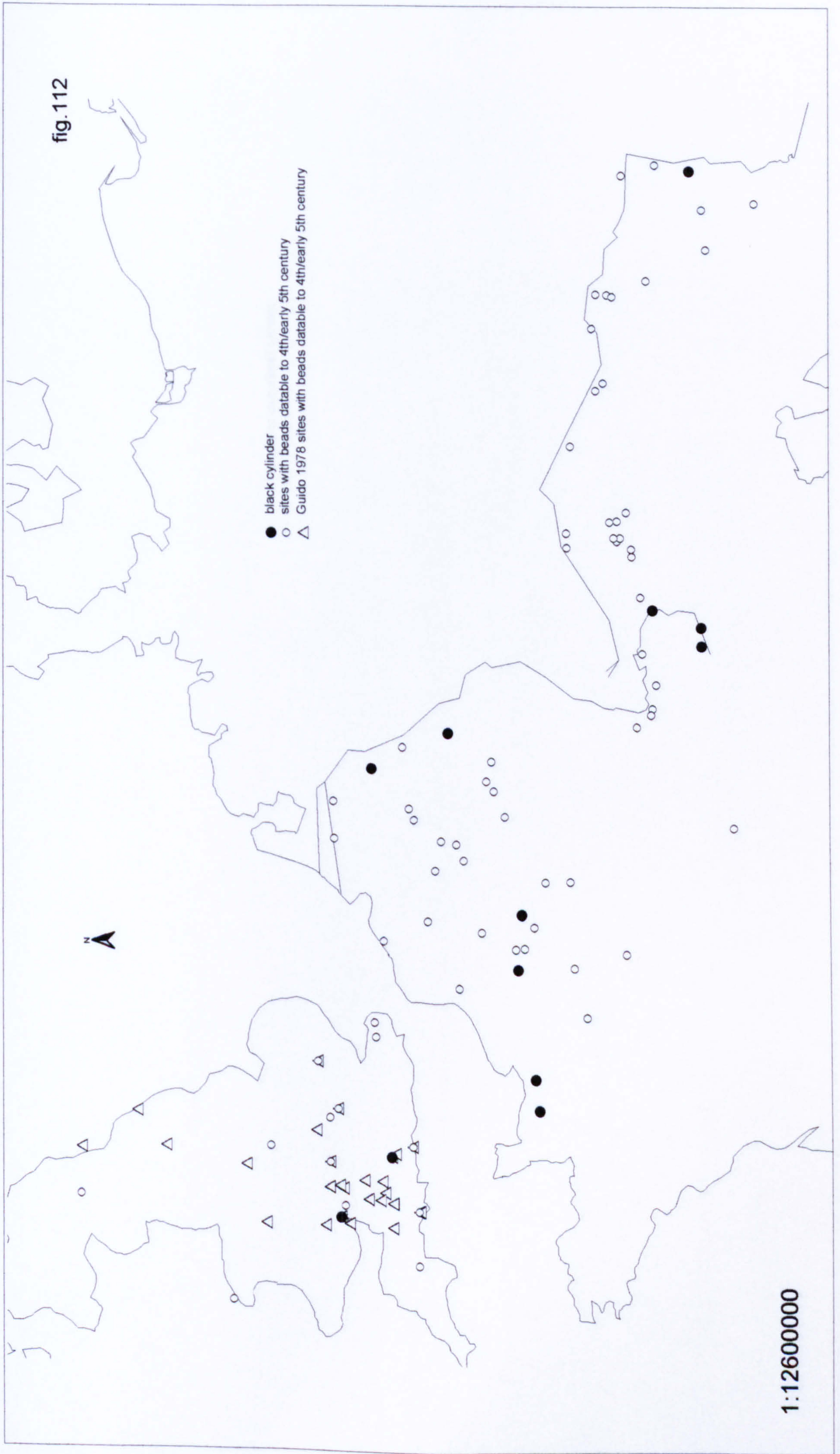
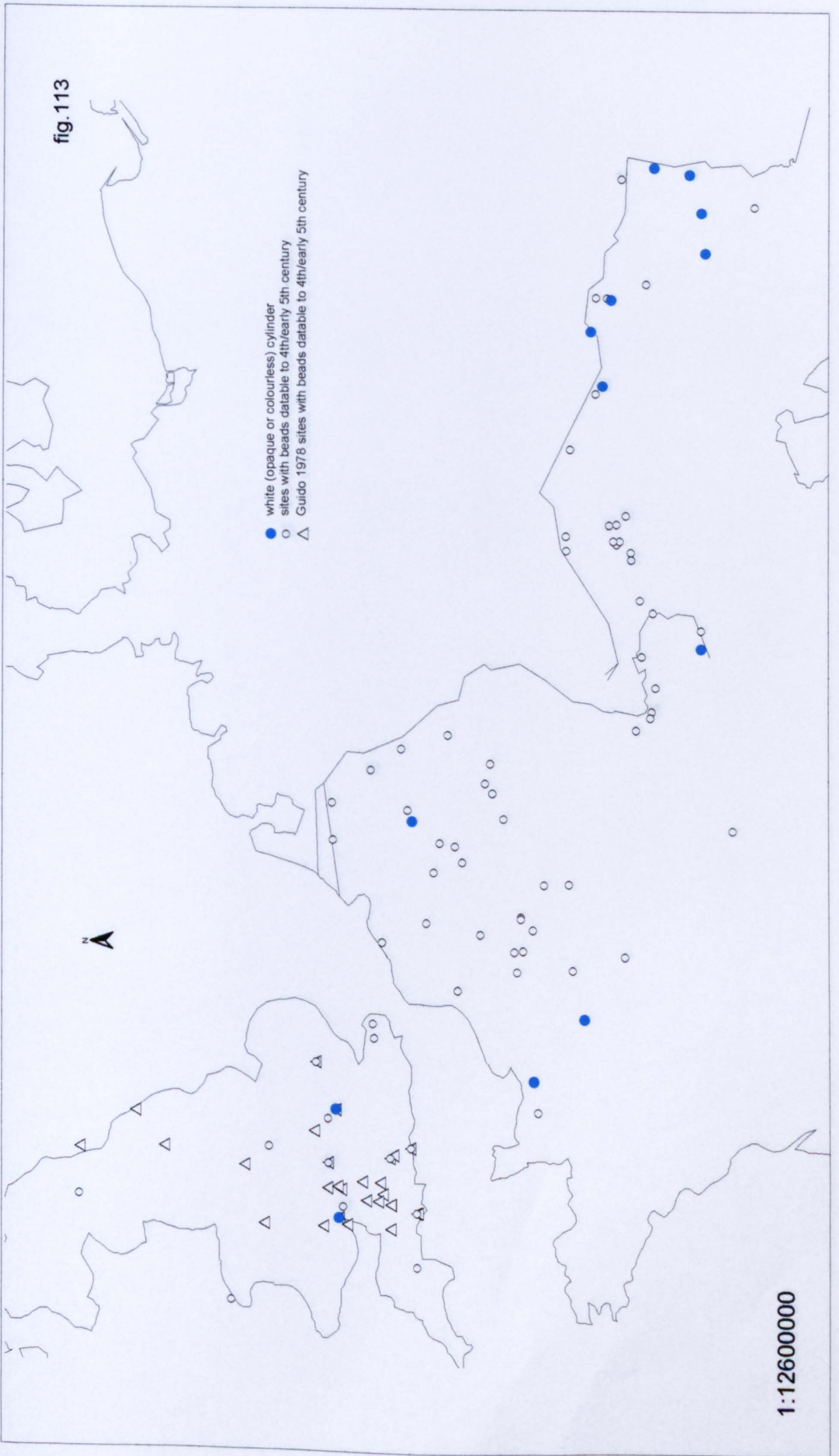


fig.112

1:12600000







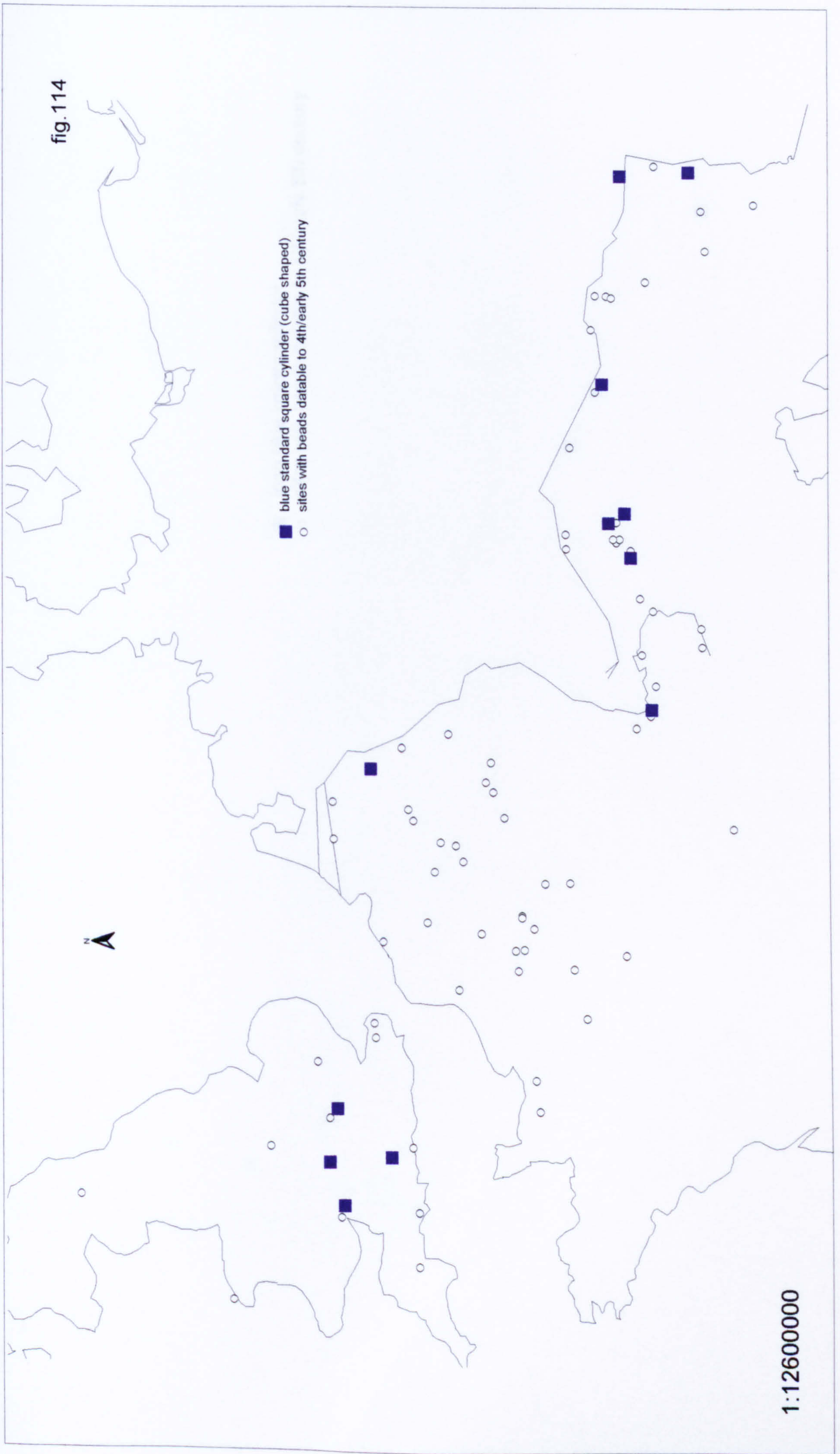
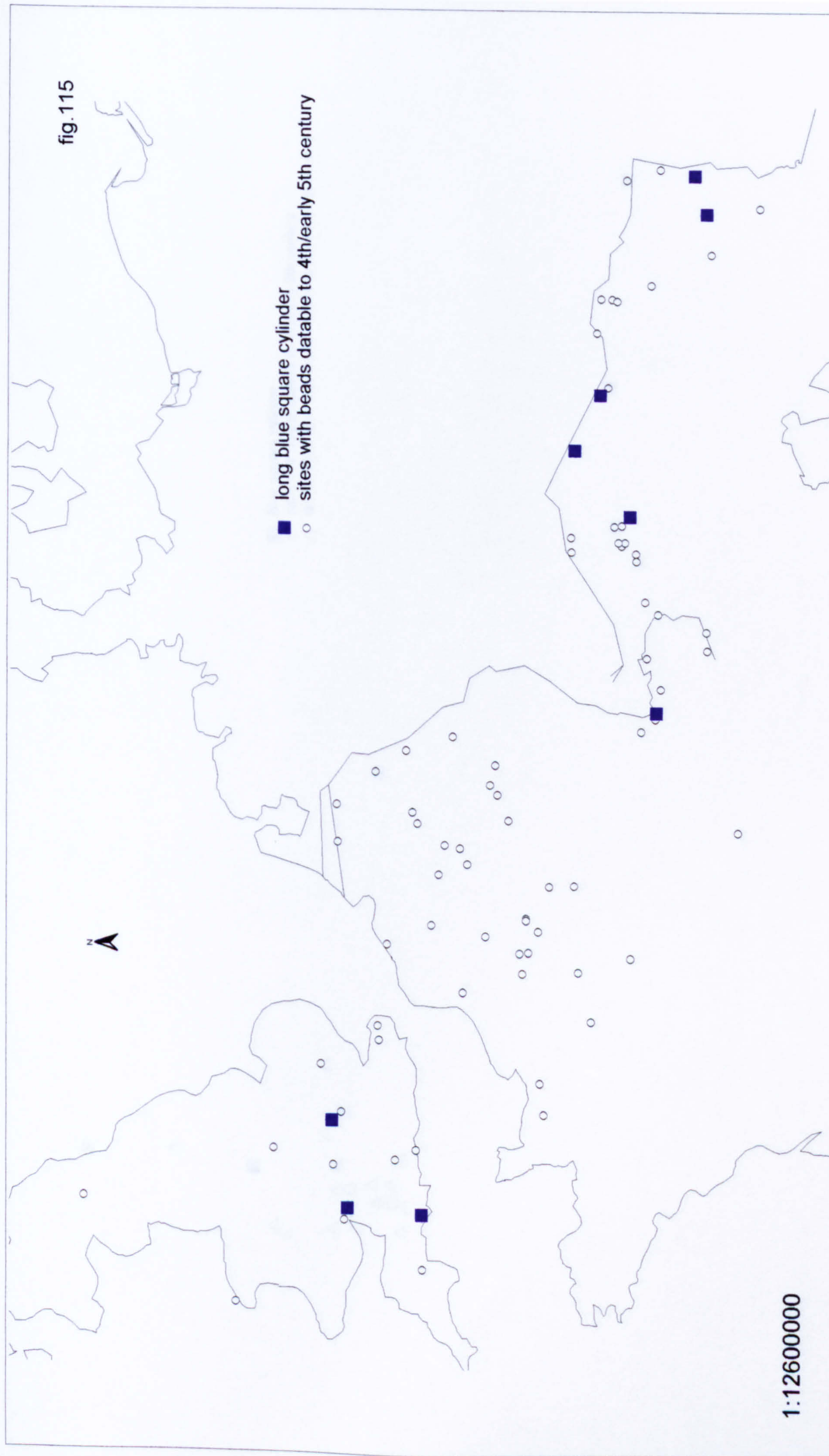
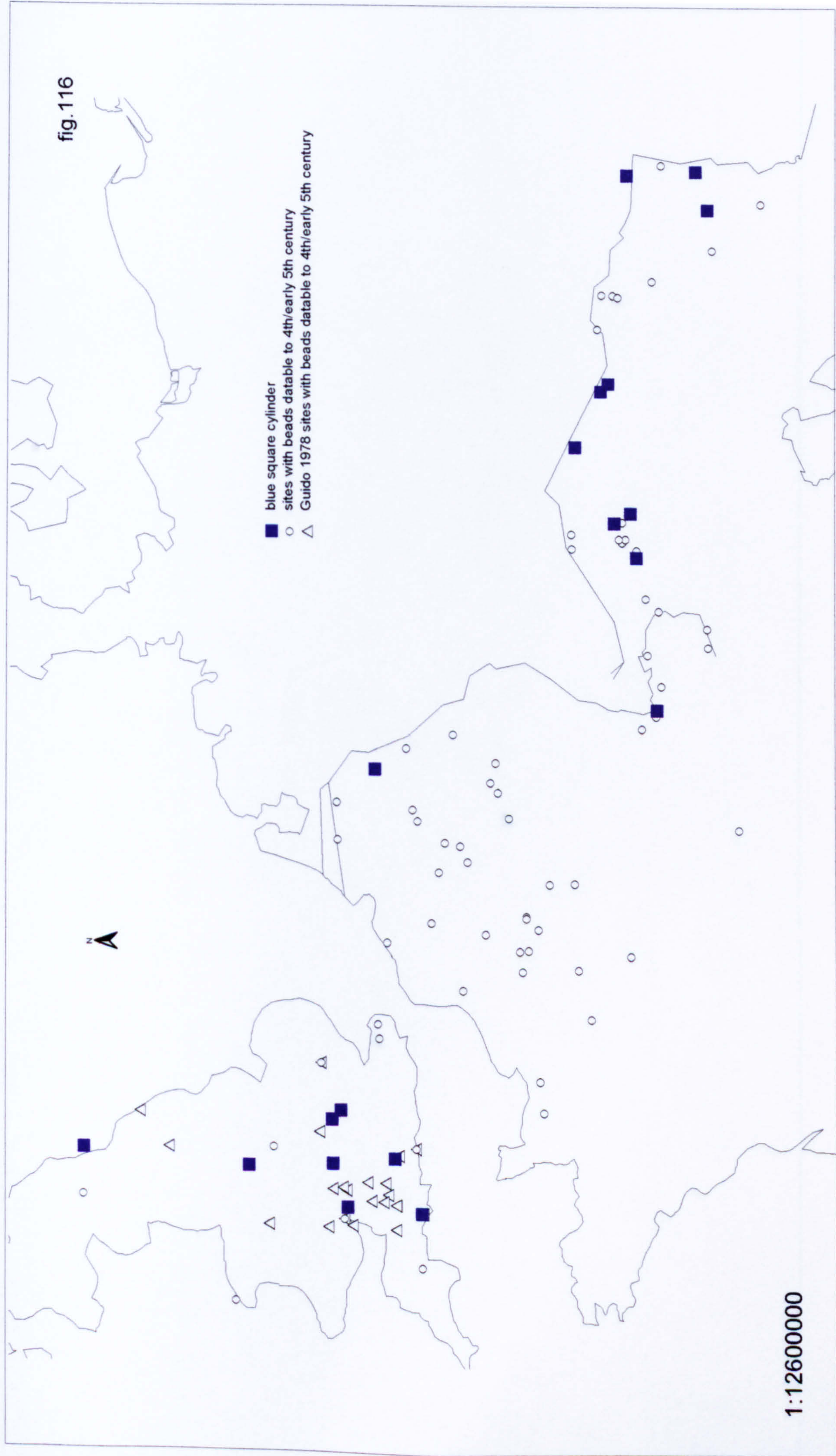


fig. 114















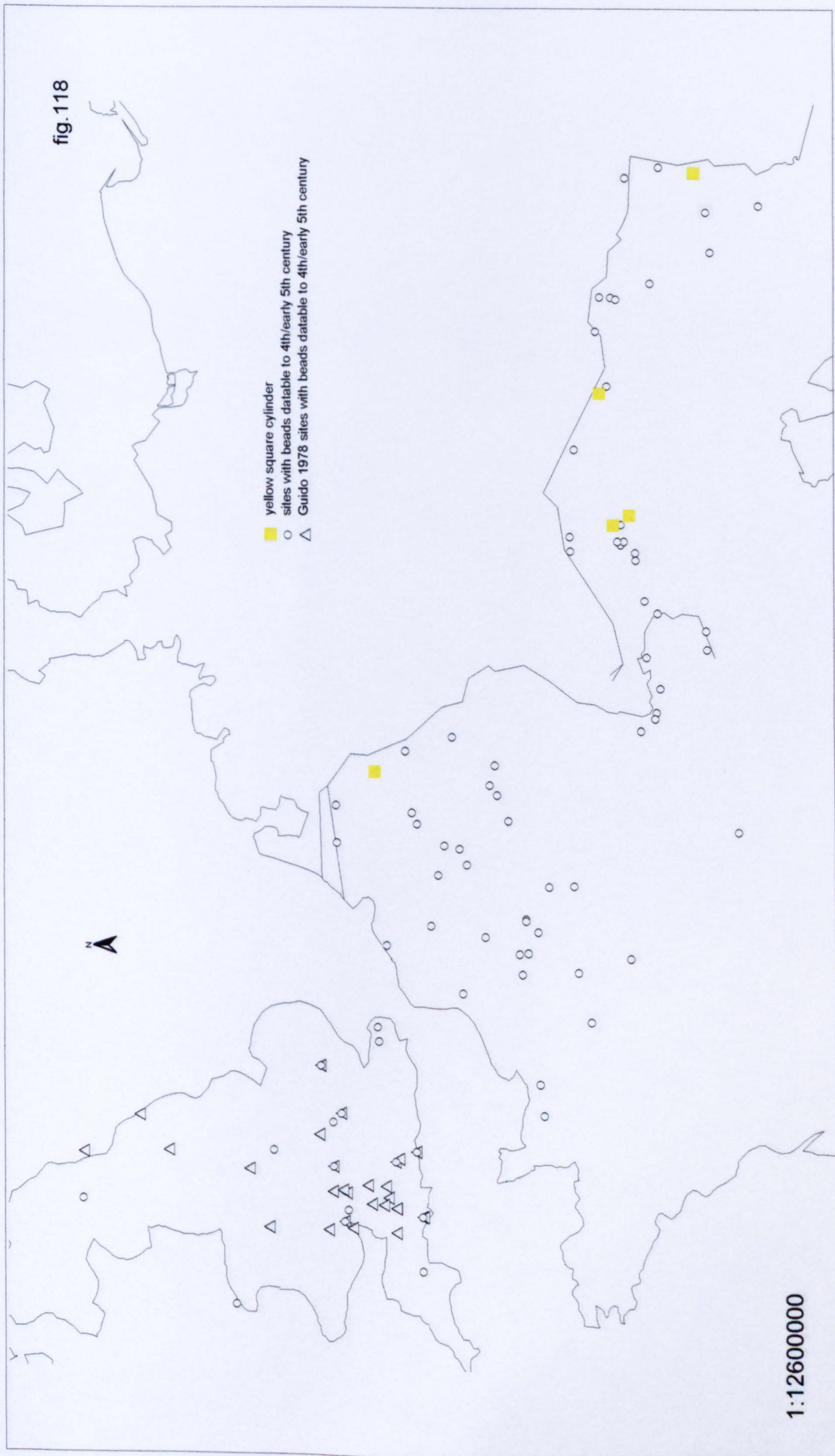


fig.118

1:12600000



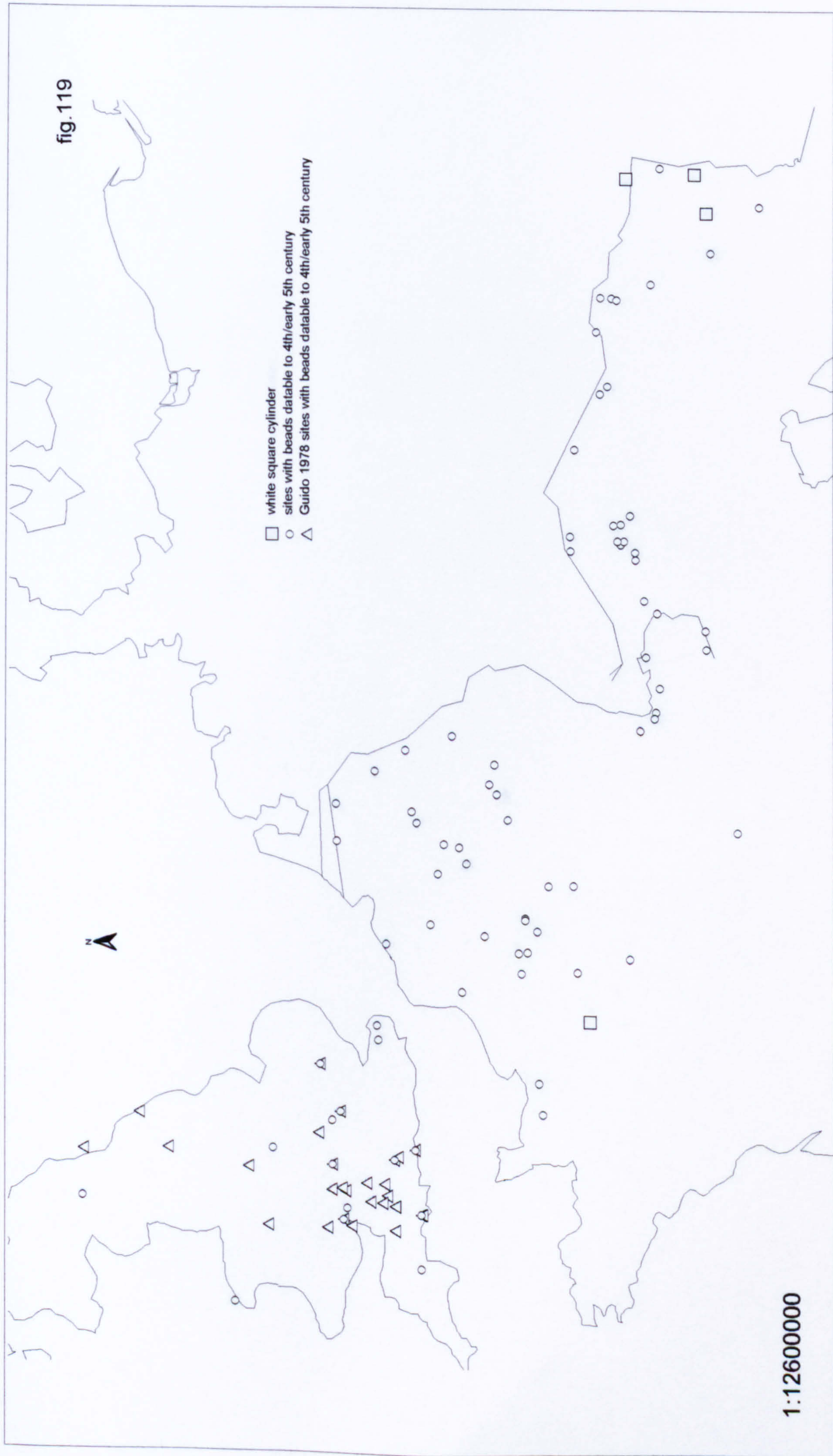


fig.119

1:12600000





fig. 120

1:1260000



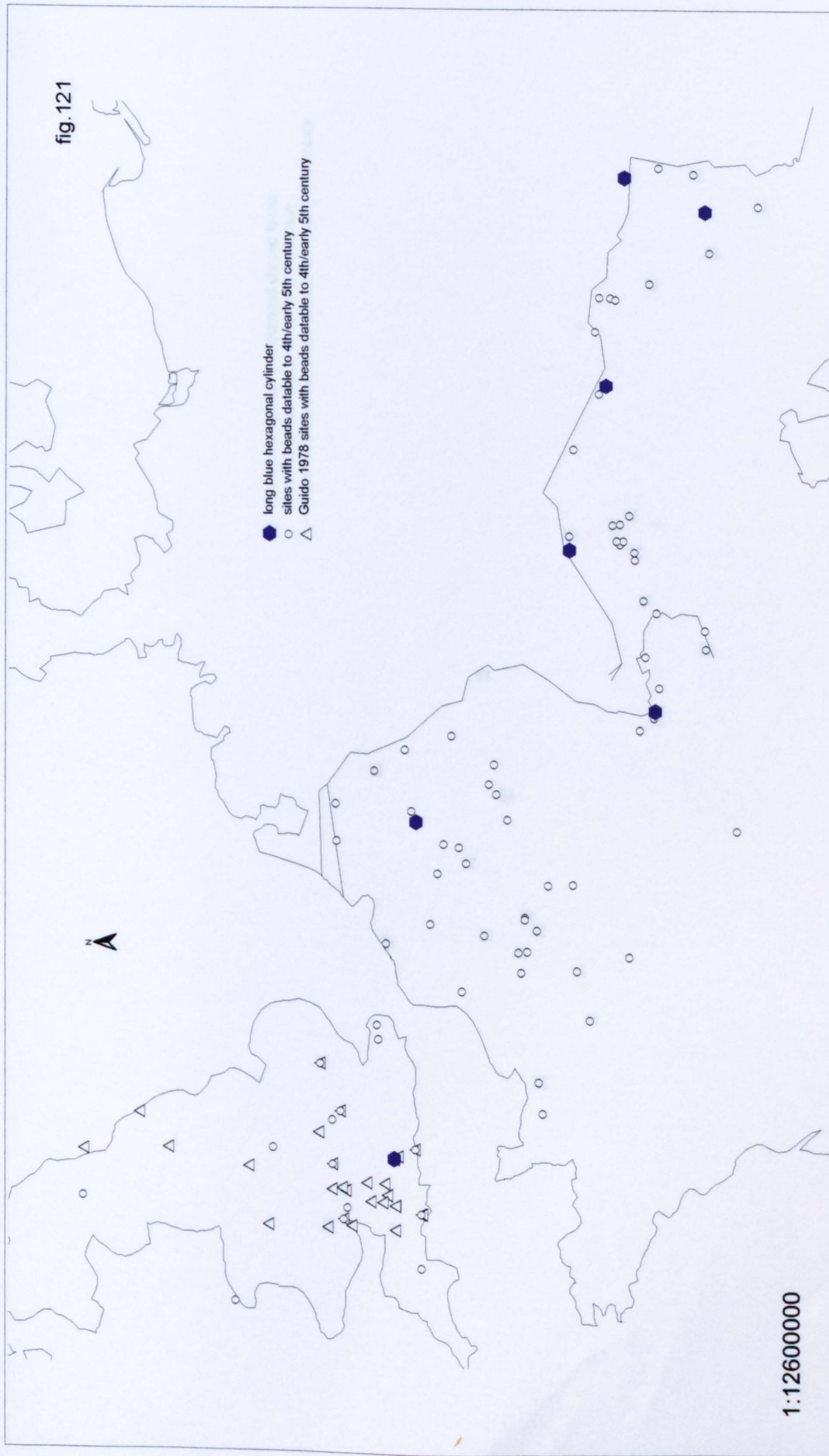


fig. 121

1:12600000



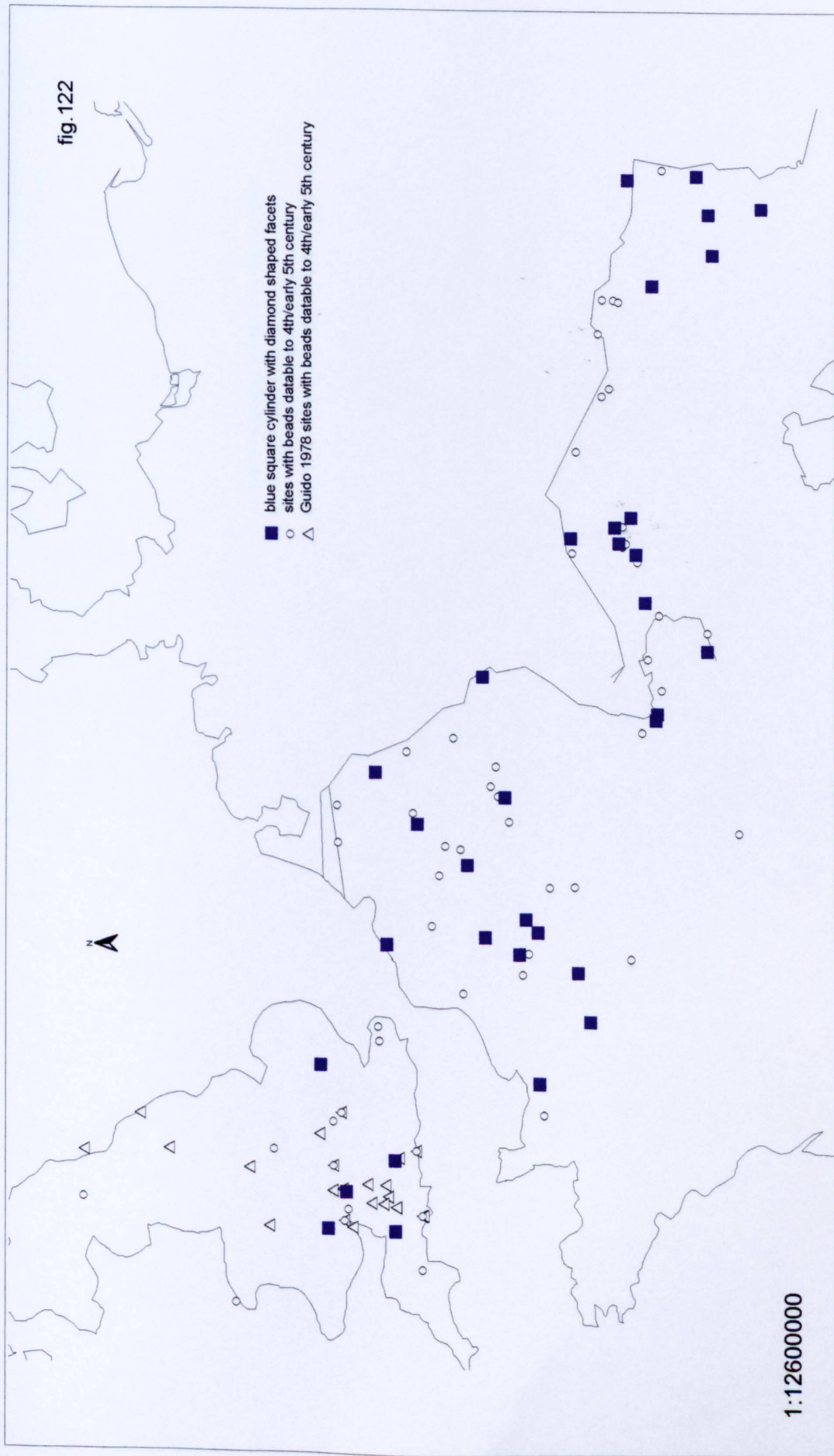






fig. 123

- green square cylinder with diamond shaped facets
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



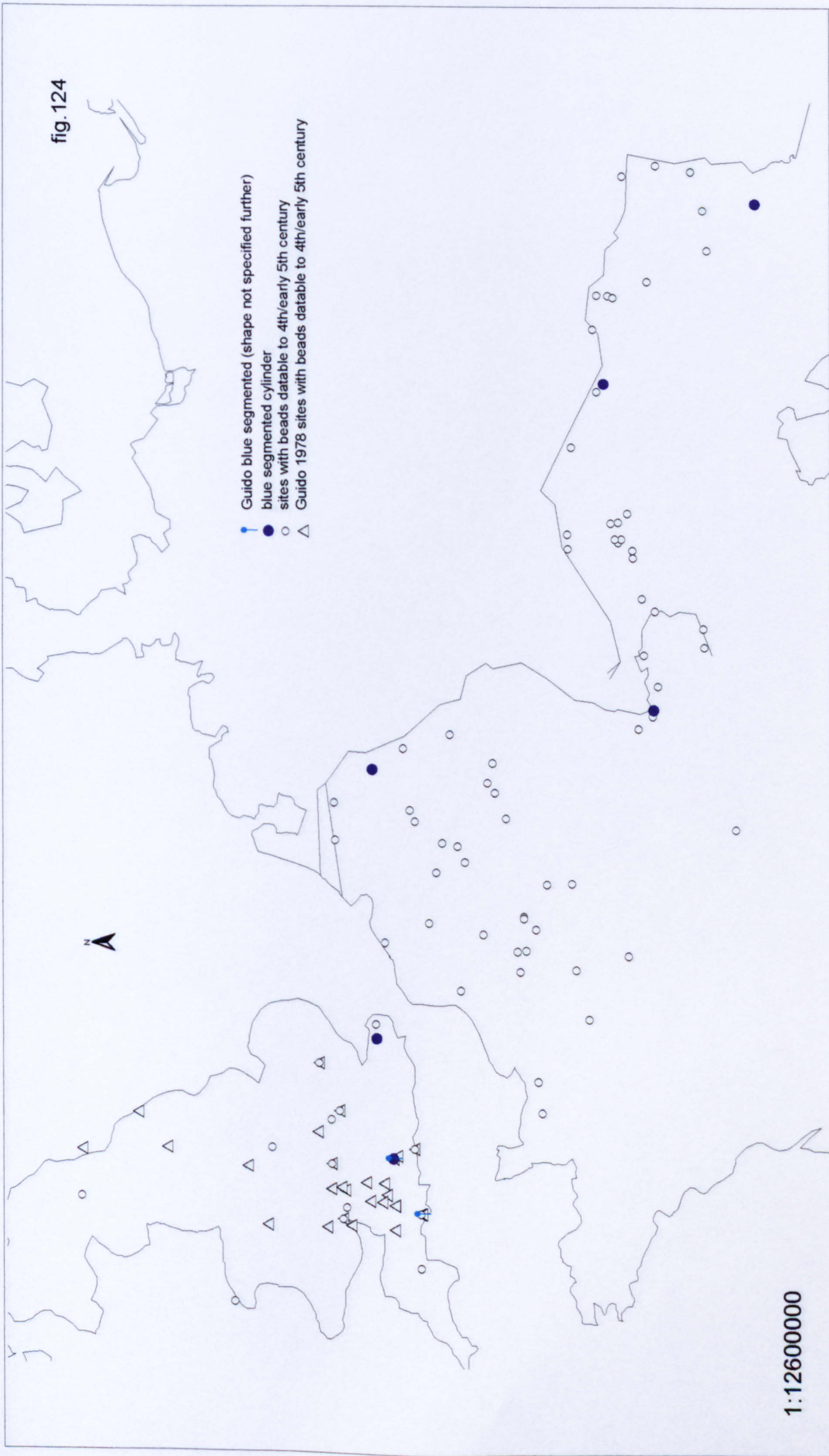
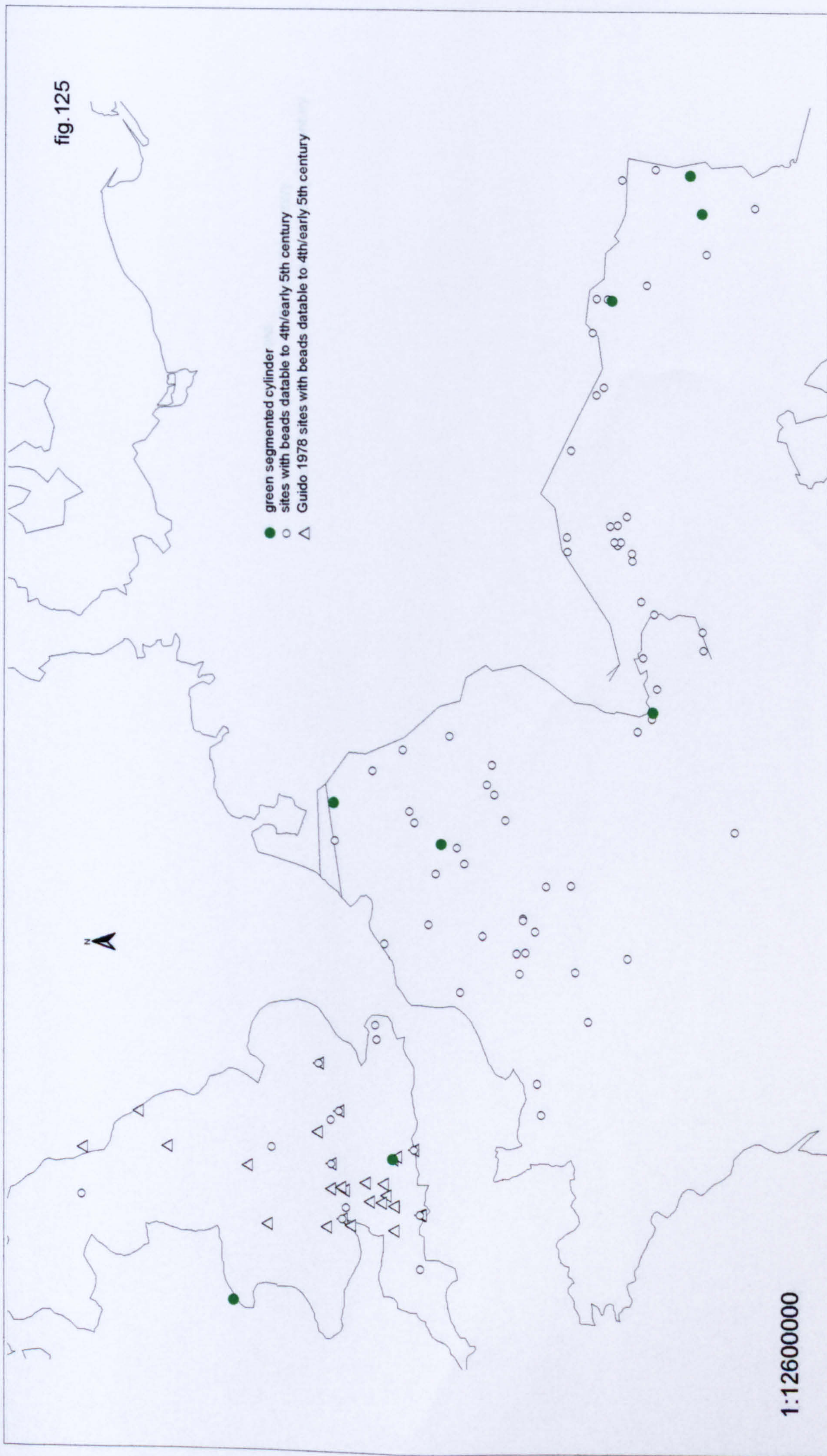


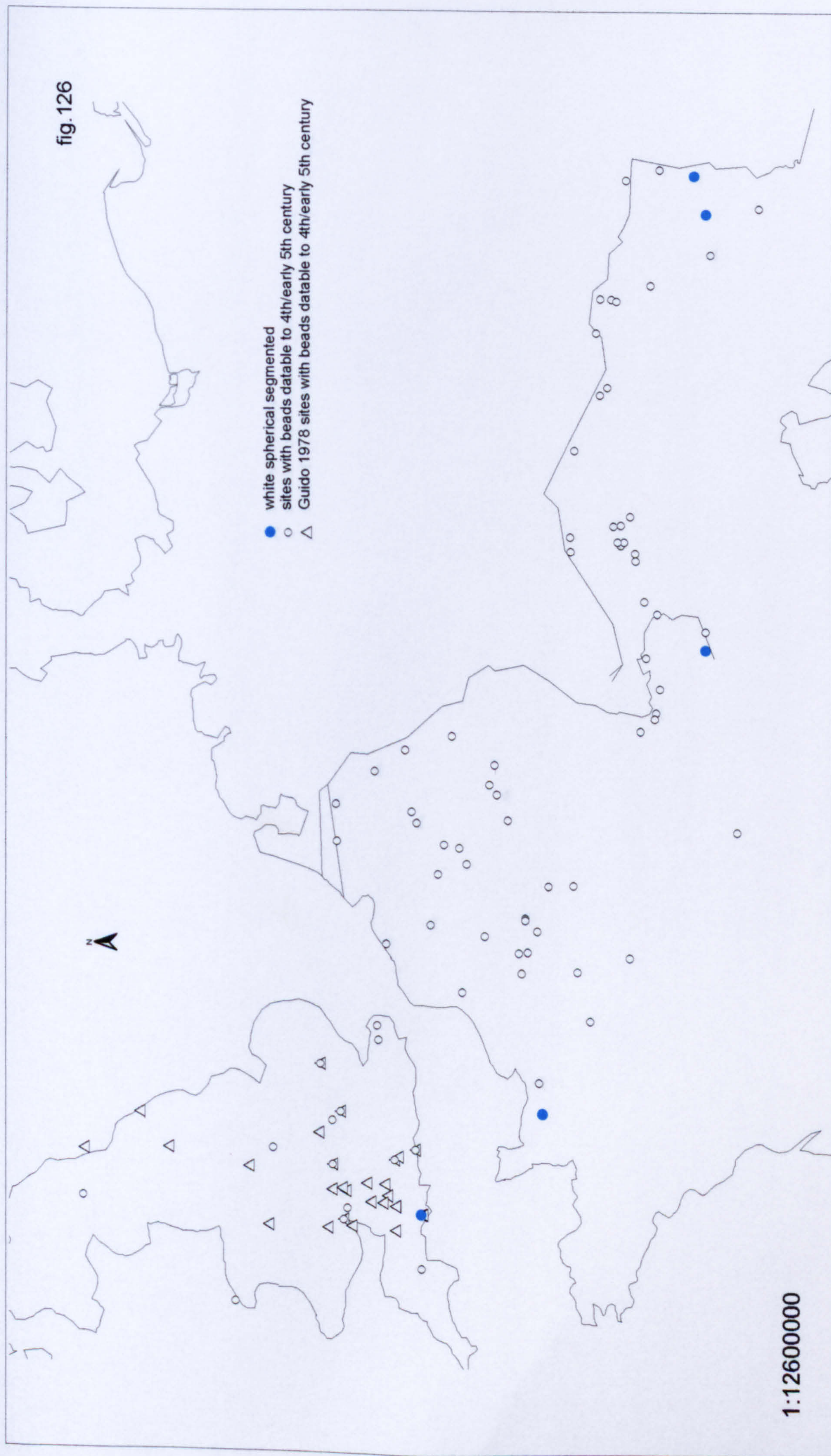
fig.124

1:12600000











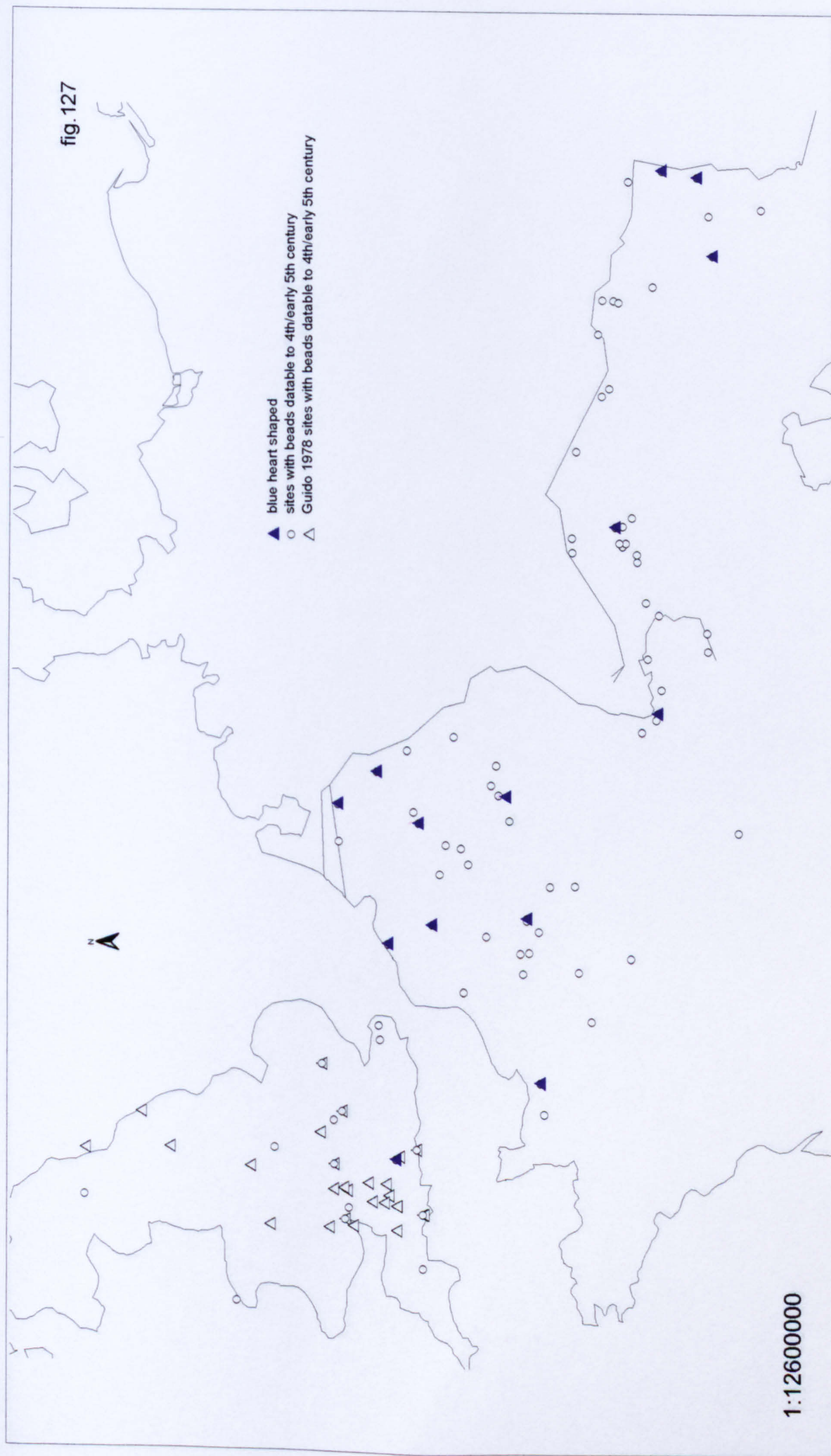
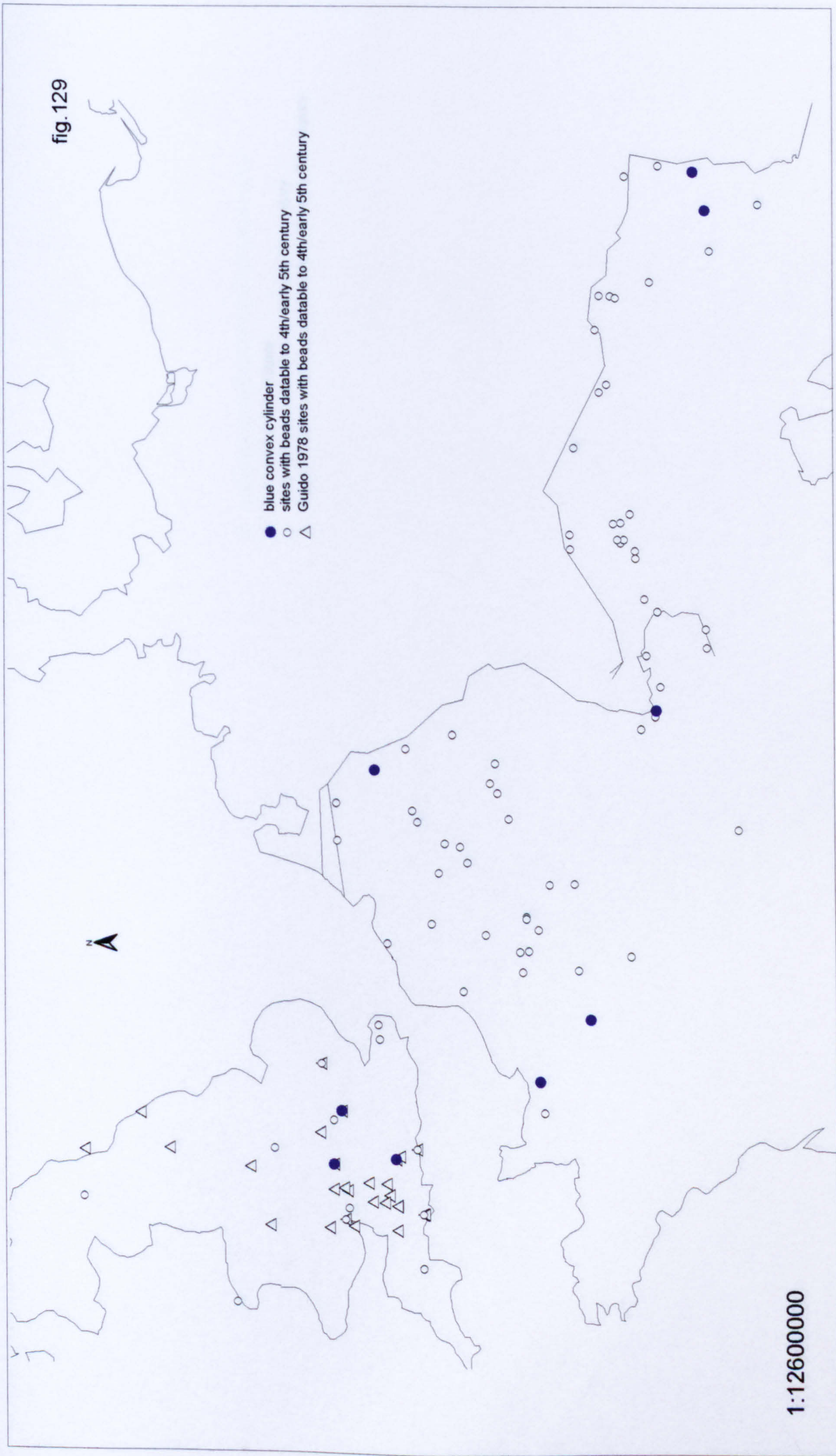


fig.127











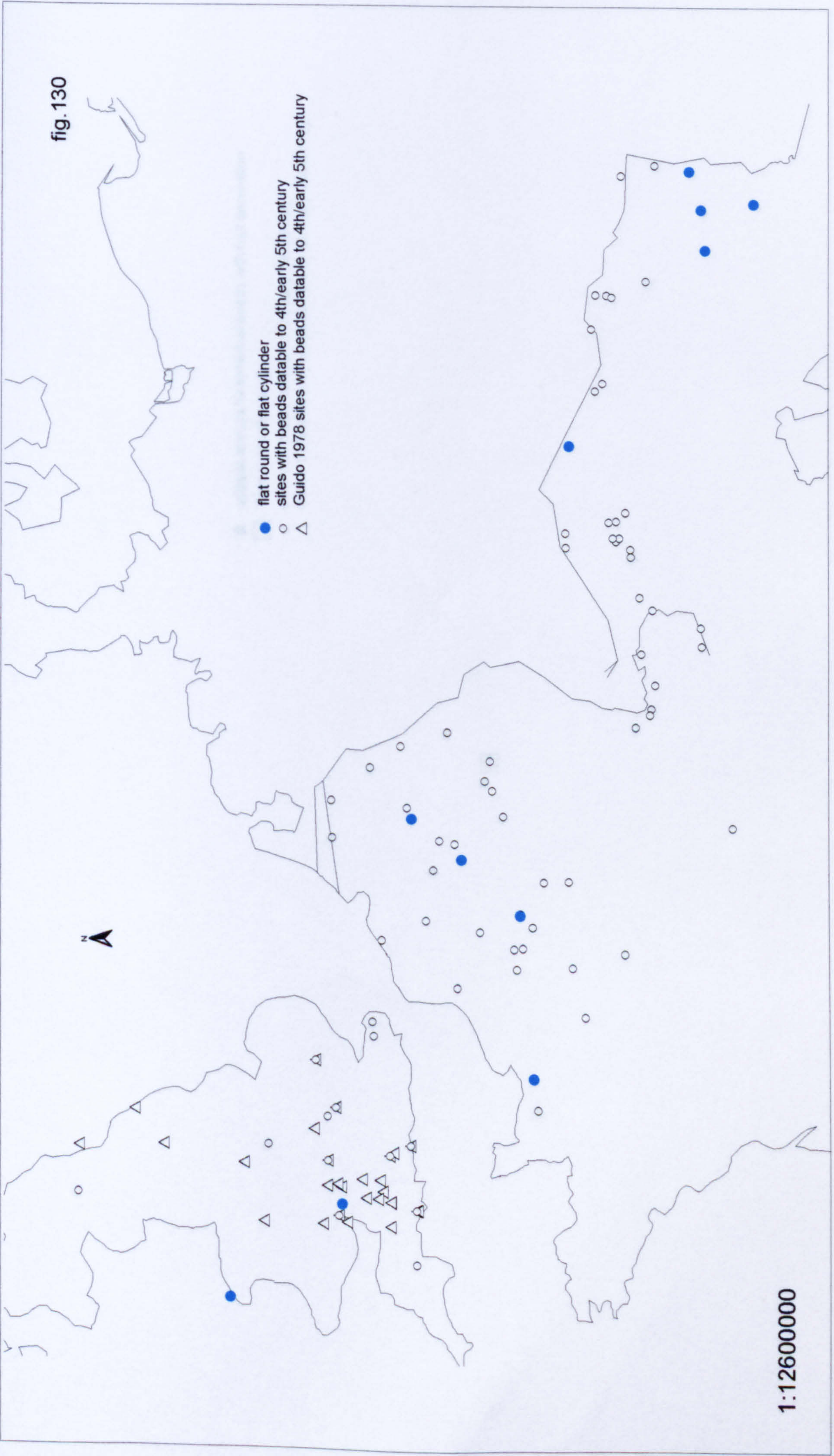






fig. 131

1:12600000

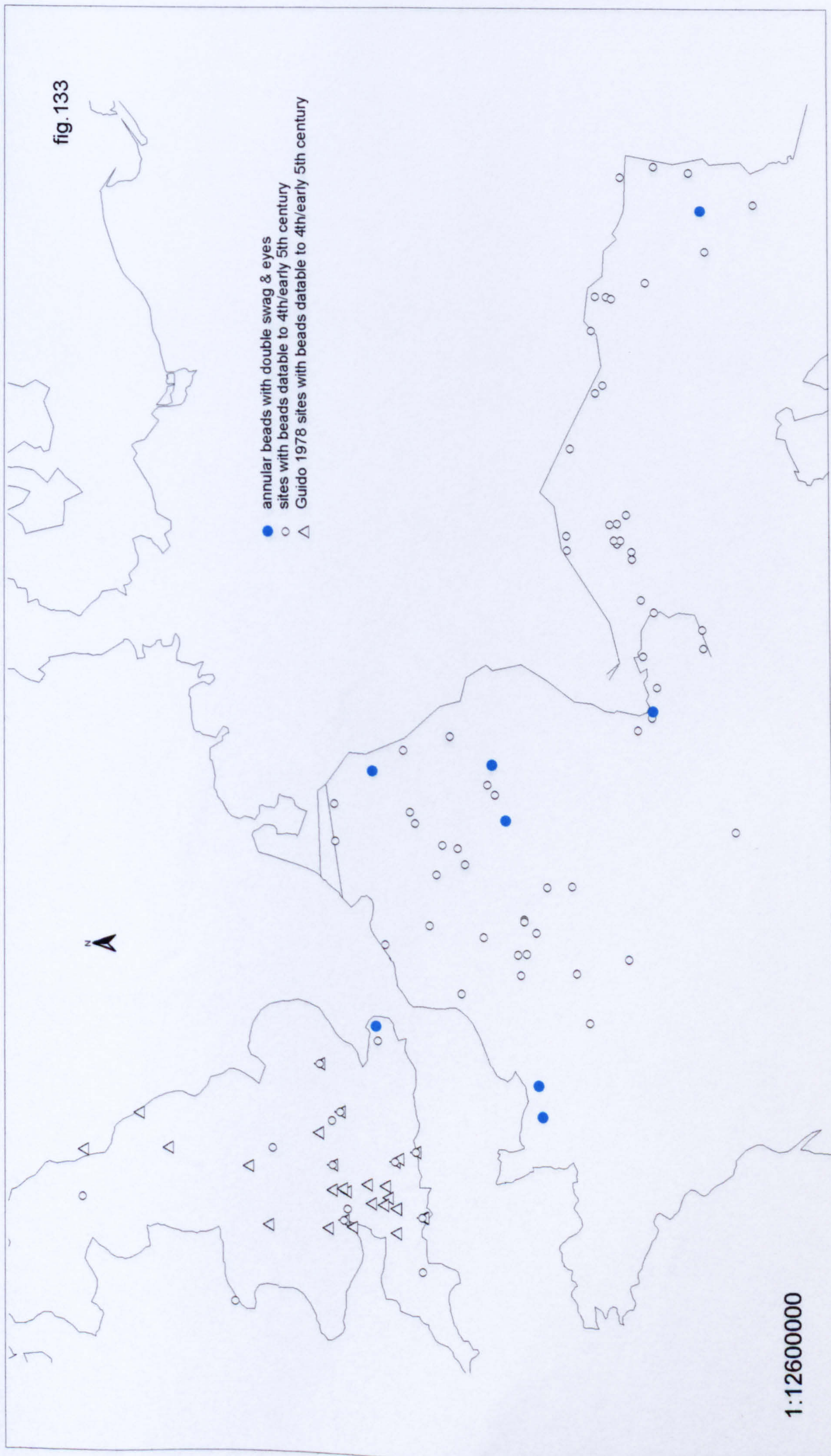




fig. 132

1:12600000







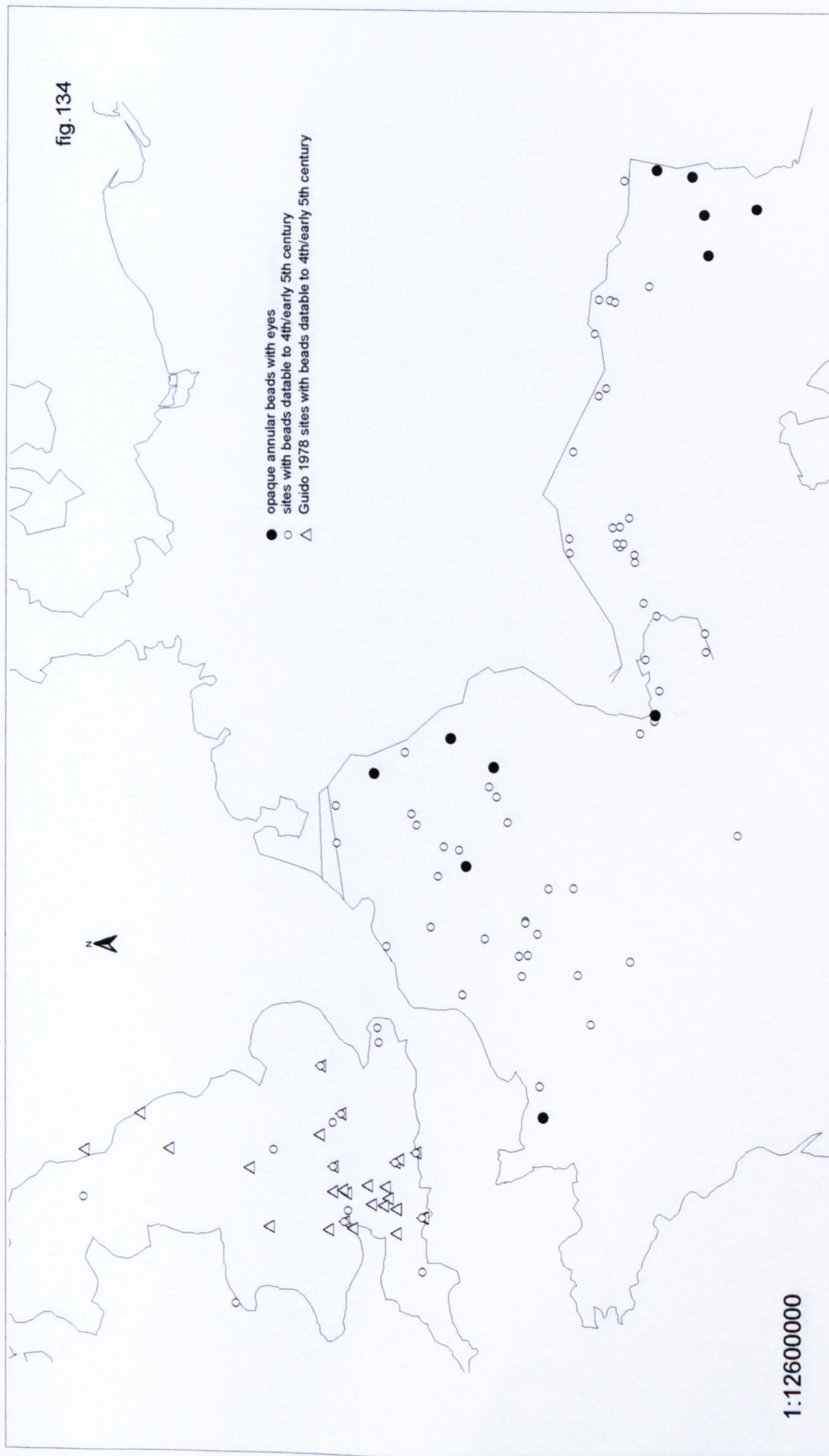
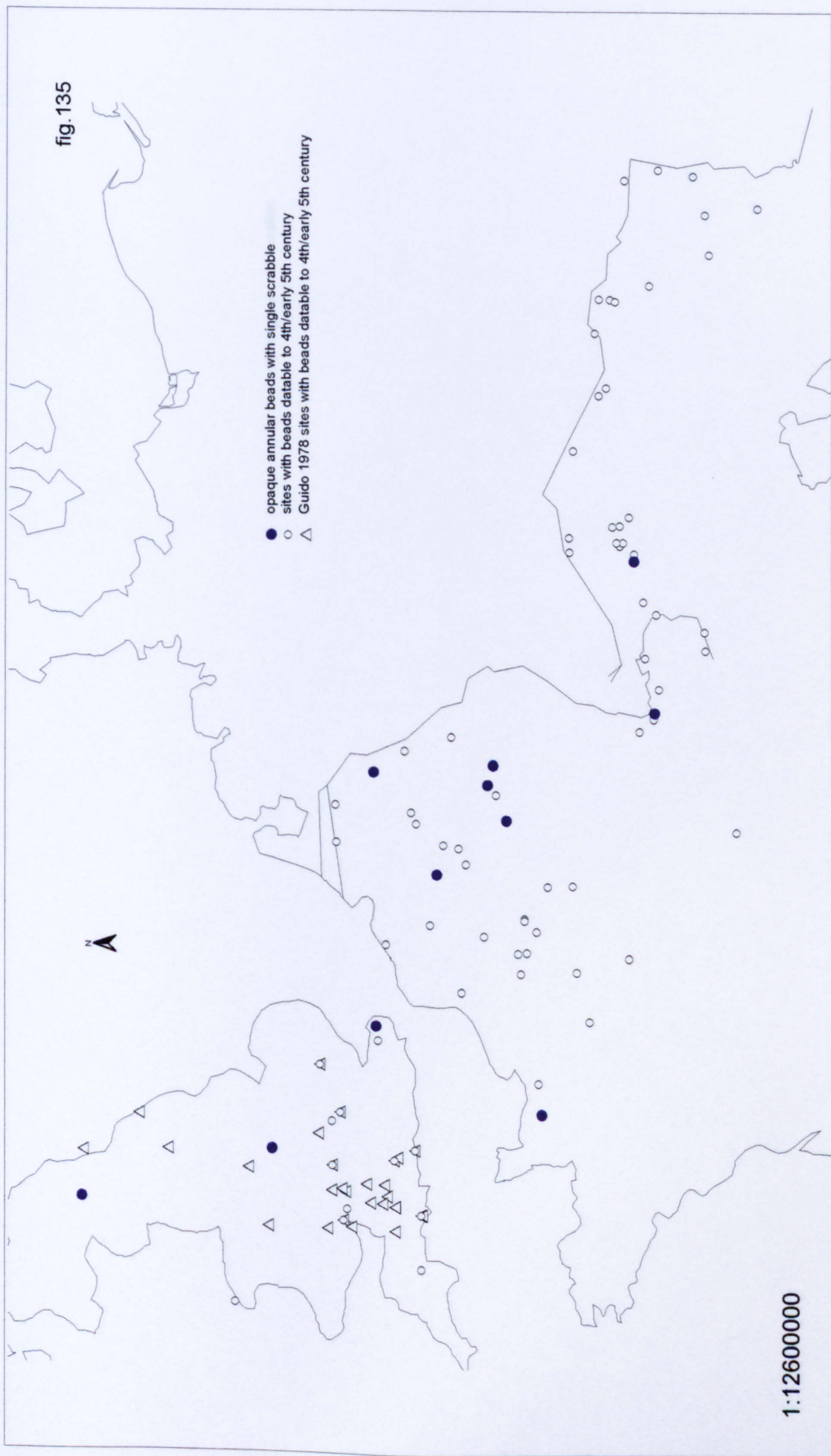


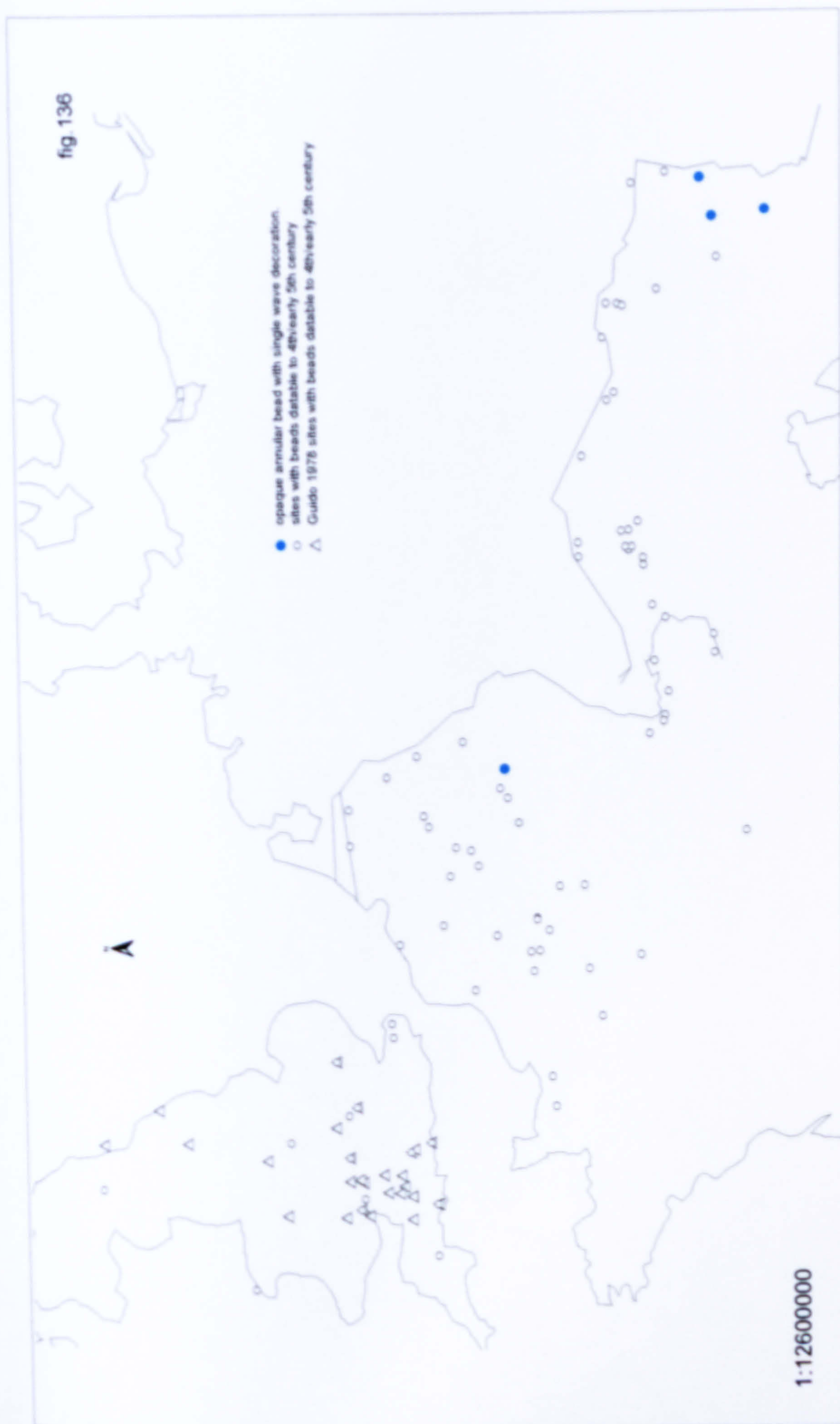
fig.134

1:12600000











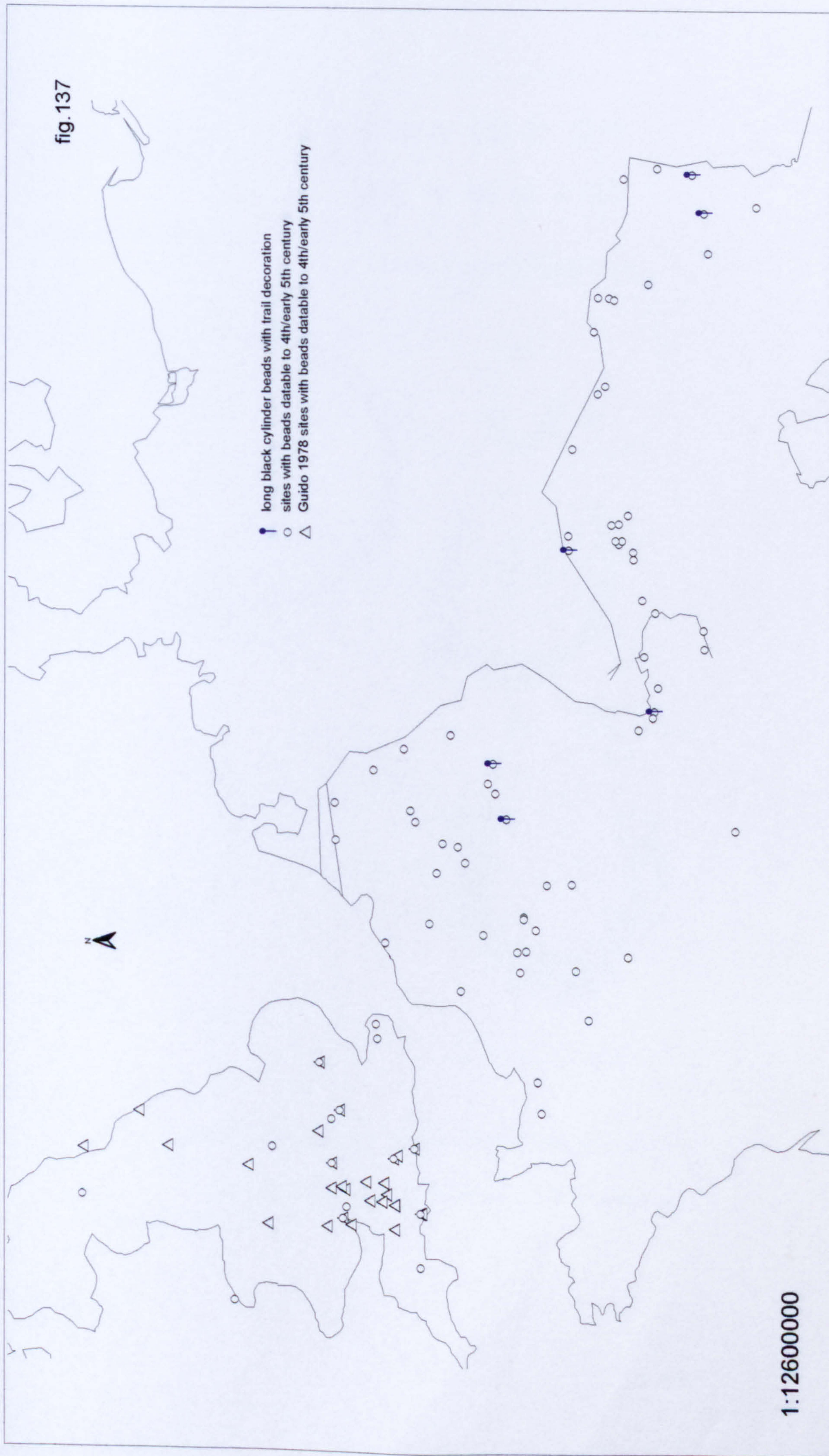


fig. 137

- long black cylinder beads with trail decoration
- sites with beads datable to 4th/early 5th century
- Guido 1978 sites with beads datable to 4th/early 5th century

1:12600000



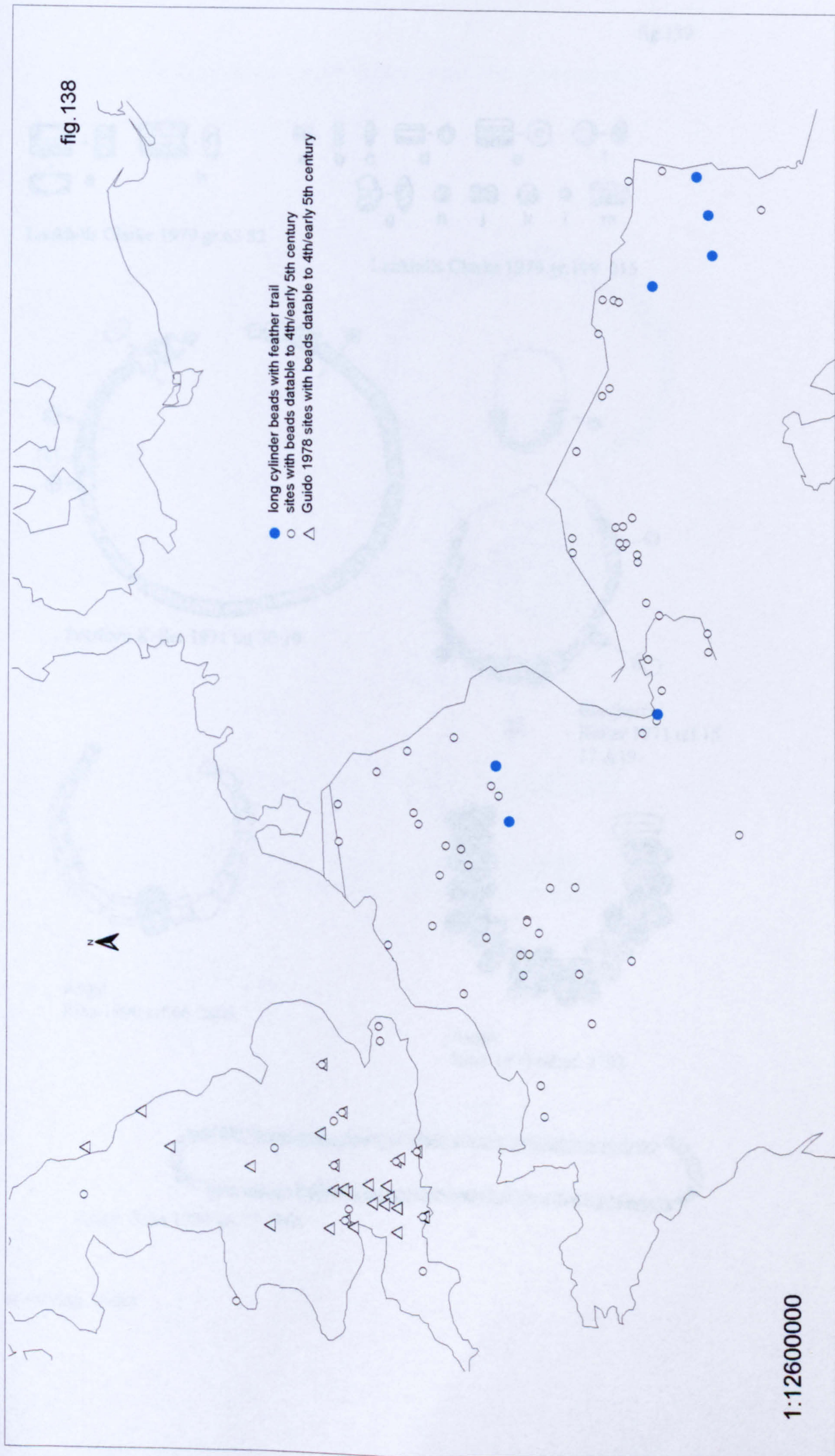
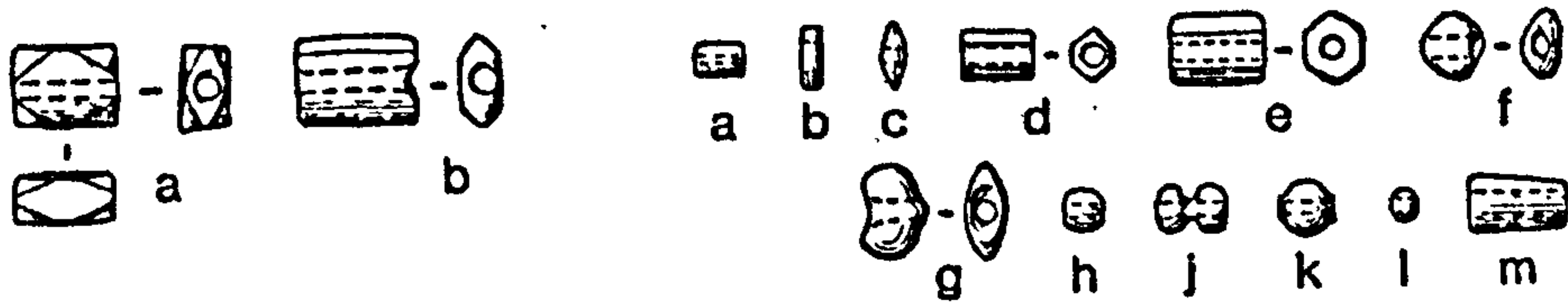


fig.138

- long cylinder beads with feather trail
- sites with beads datable to 4th/early 5th century
- △ Guido 1978 sites with beads datable to 4th/early 5th century

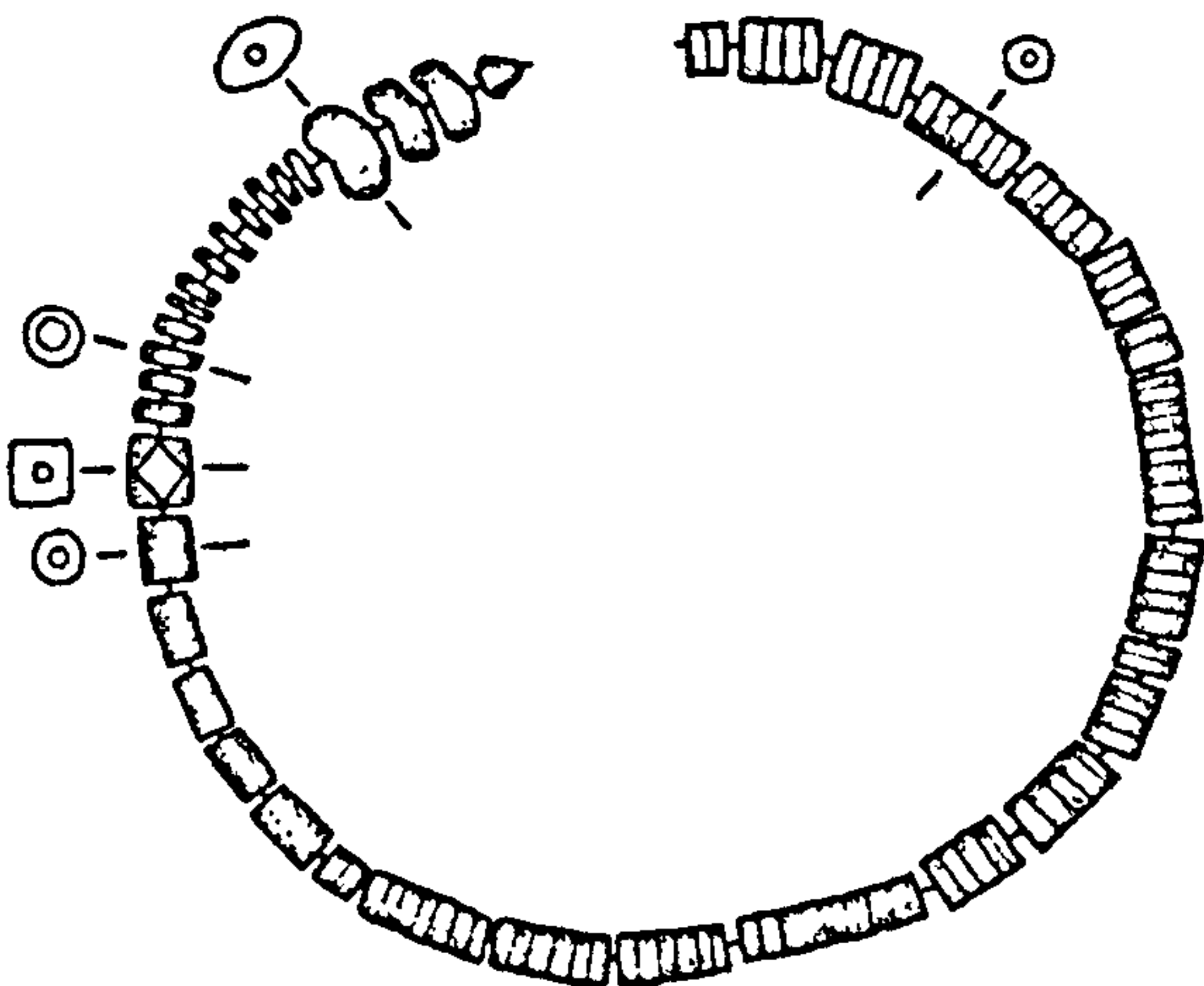
1:12600000



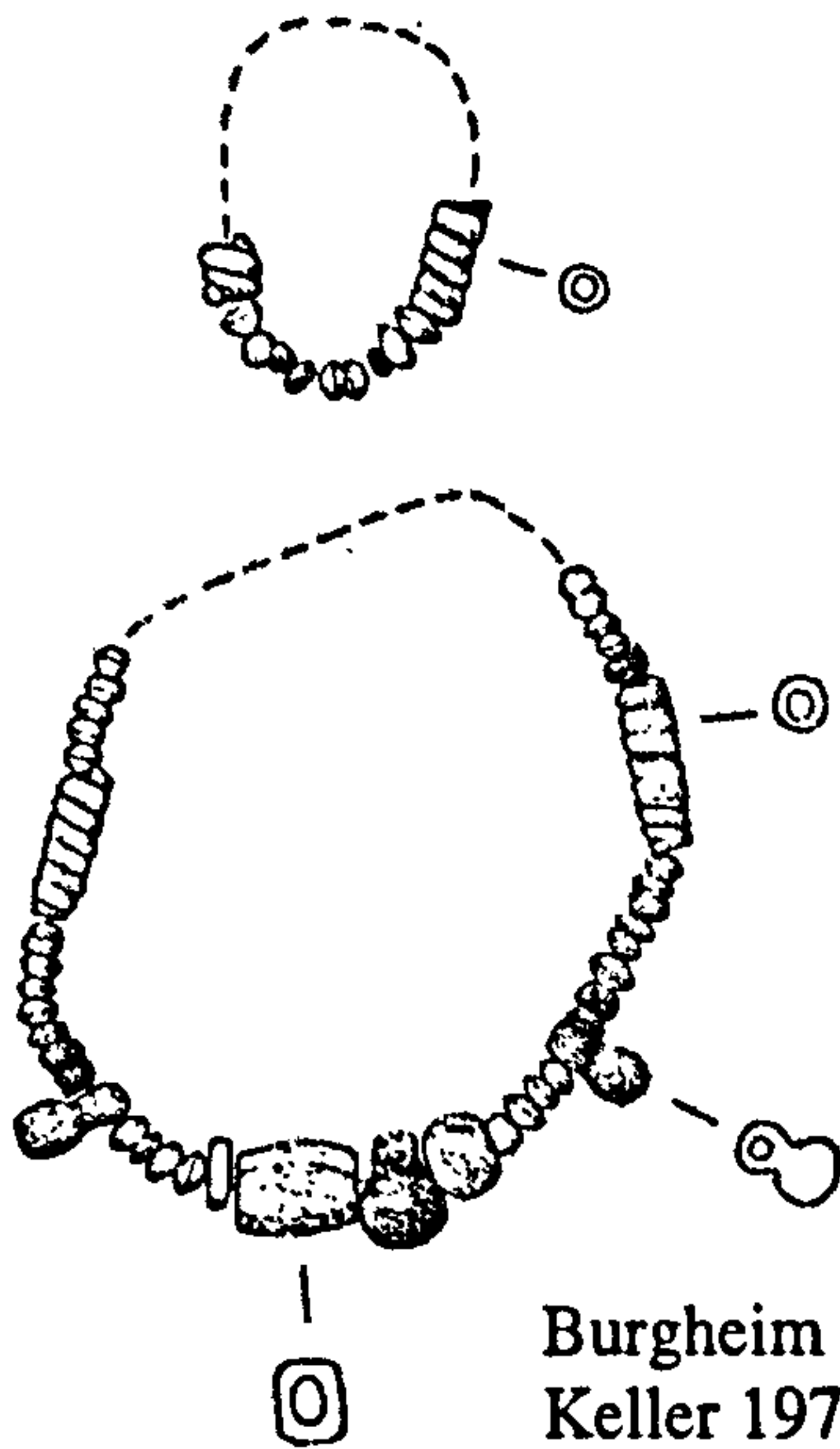


Lankhills Clarke 1979 gr.63 52

Lankhills Clarke 1979 gr.199 215



Potzham Keller 1971 taf 30 10



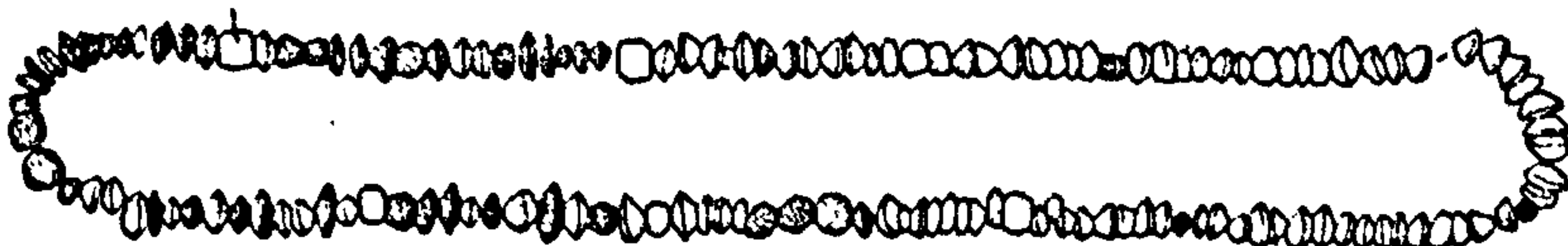
Burgheim  
Keller 1971 taf.15  
17 &19



Augst  
Riha 1990 taf.66 2808



Augst  
Riha 1990 taf.66 2793

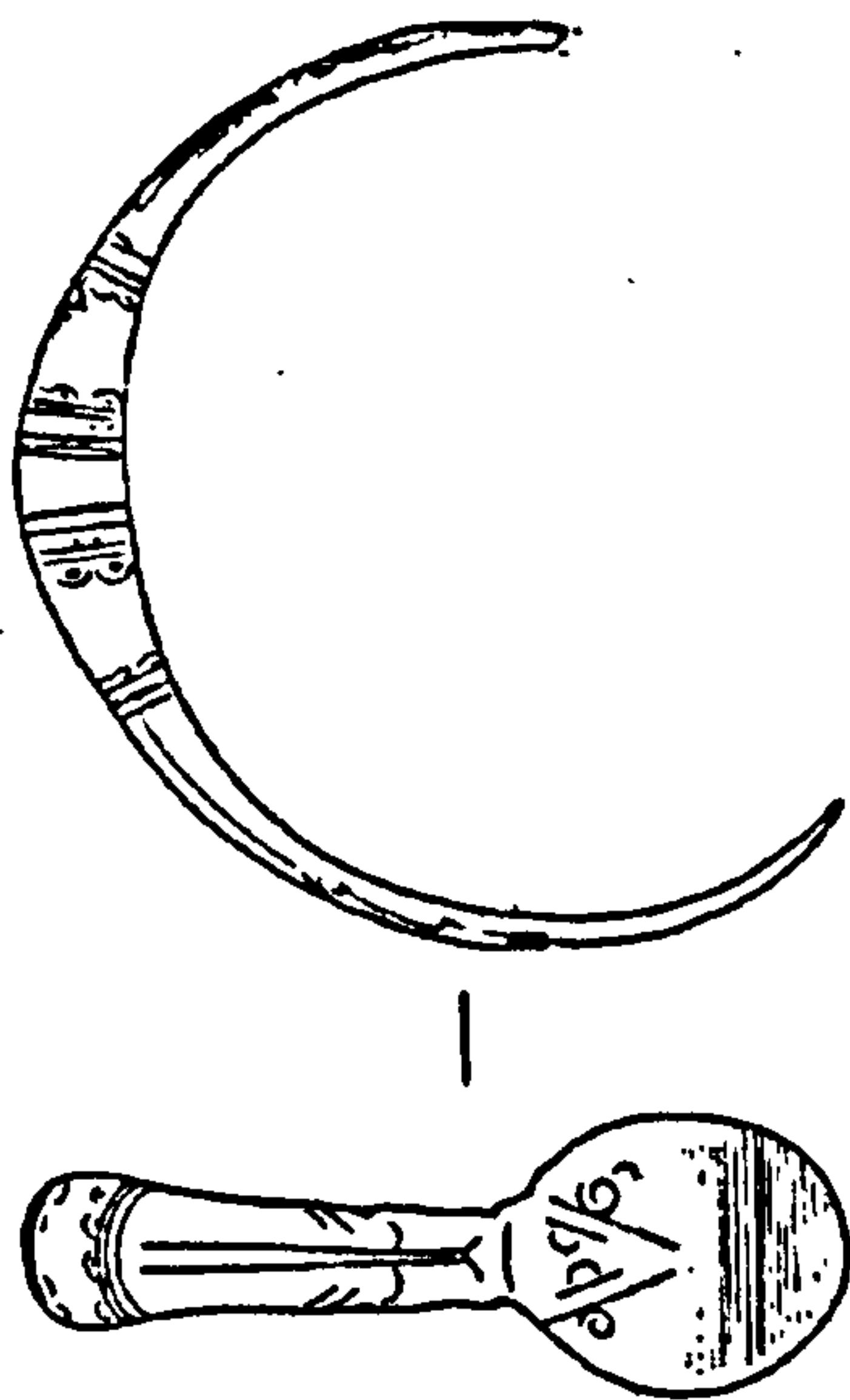


Augst Riha 1990 taf.77 2968

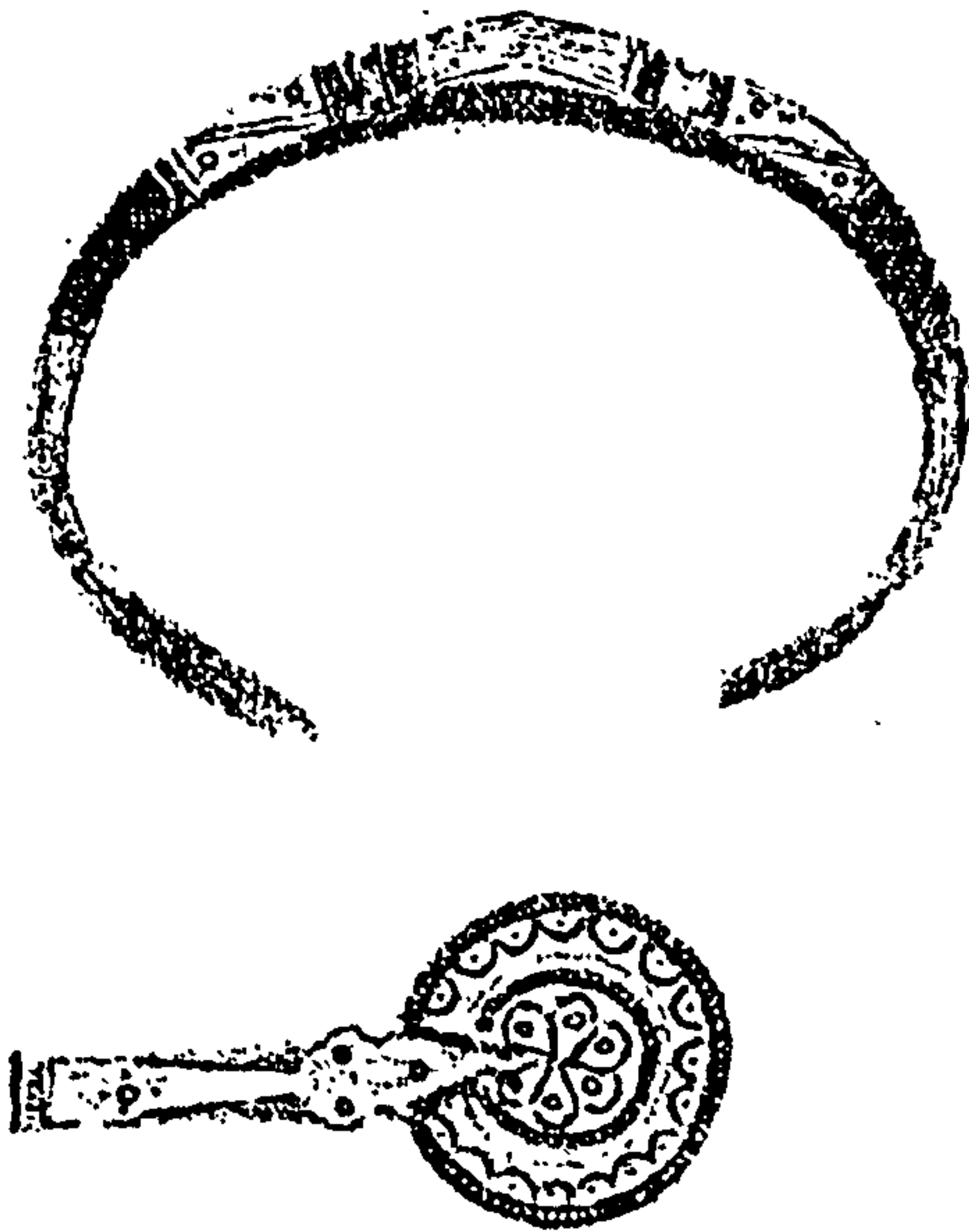
at varying scales



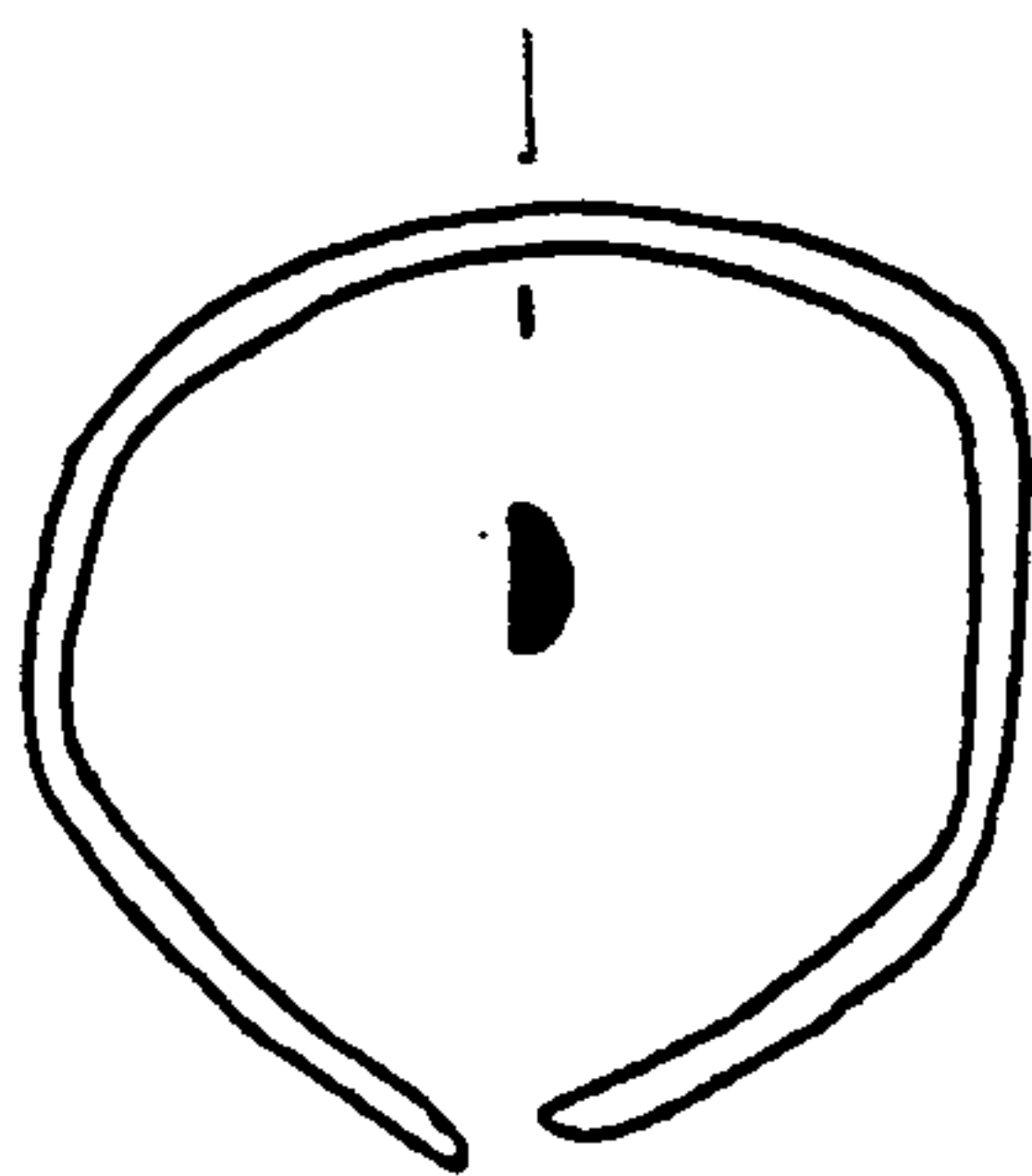
Links between late fourth century bracelets from Vron and fifth century bracelets



Chatham Lines  
Evison 1965 fig.15



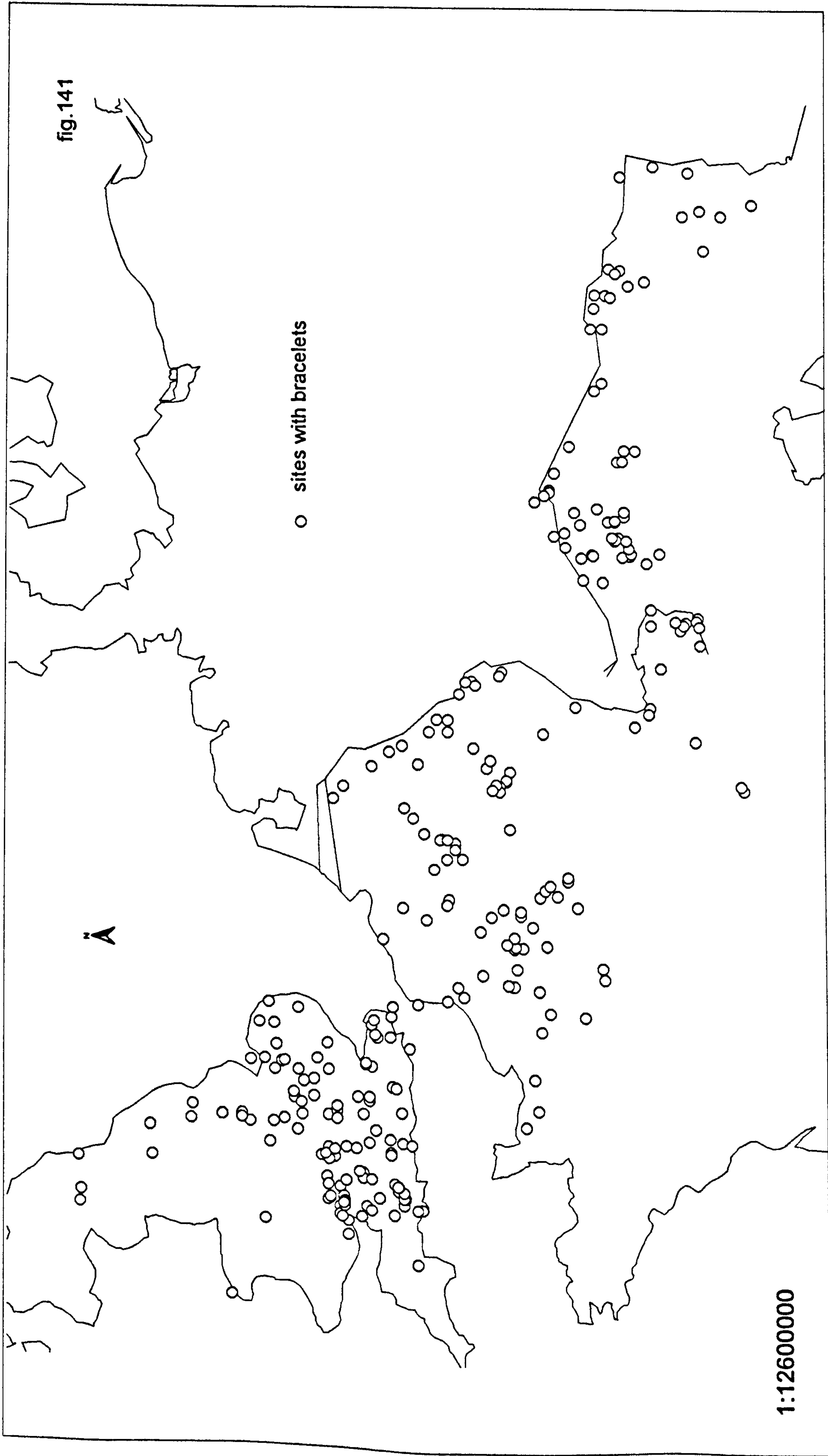
Chessel Down  
Evison 1965 fig.13



Vron  
Seillier unpublished t.249a (above)  
Seliier unpublished t.245a (below)

at varying scales







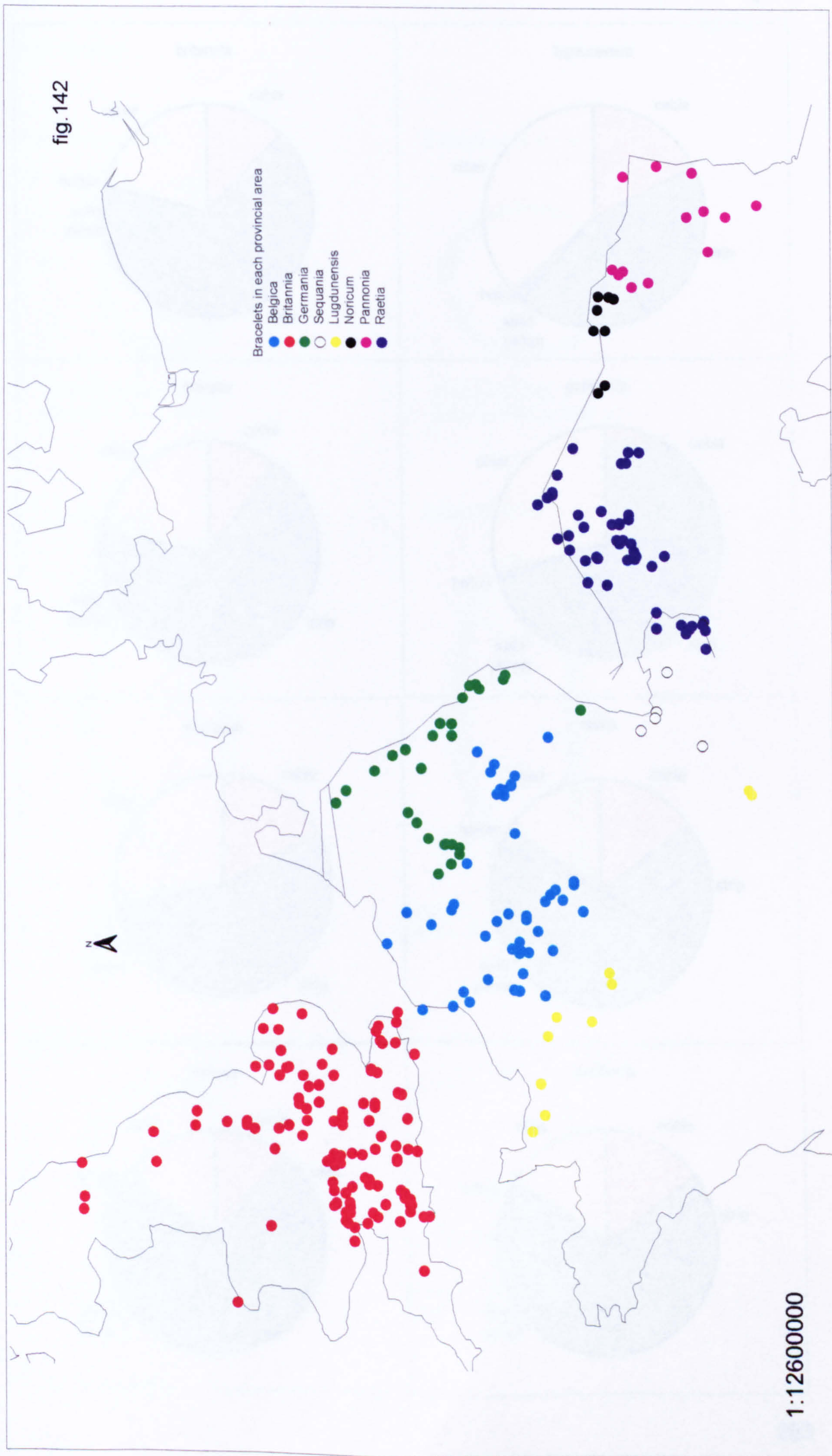
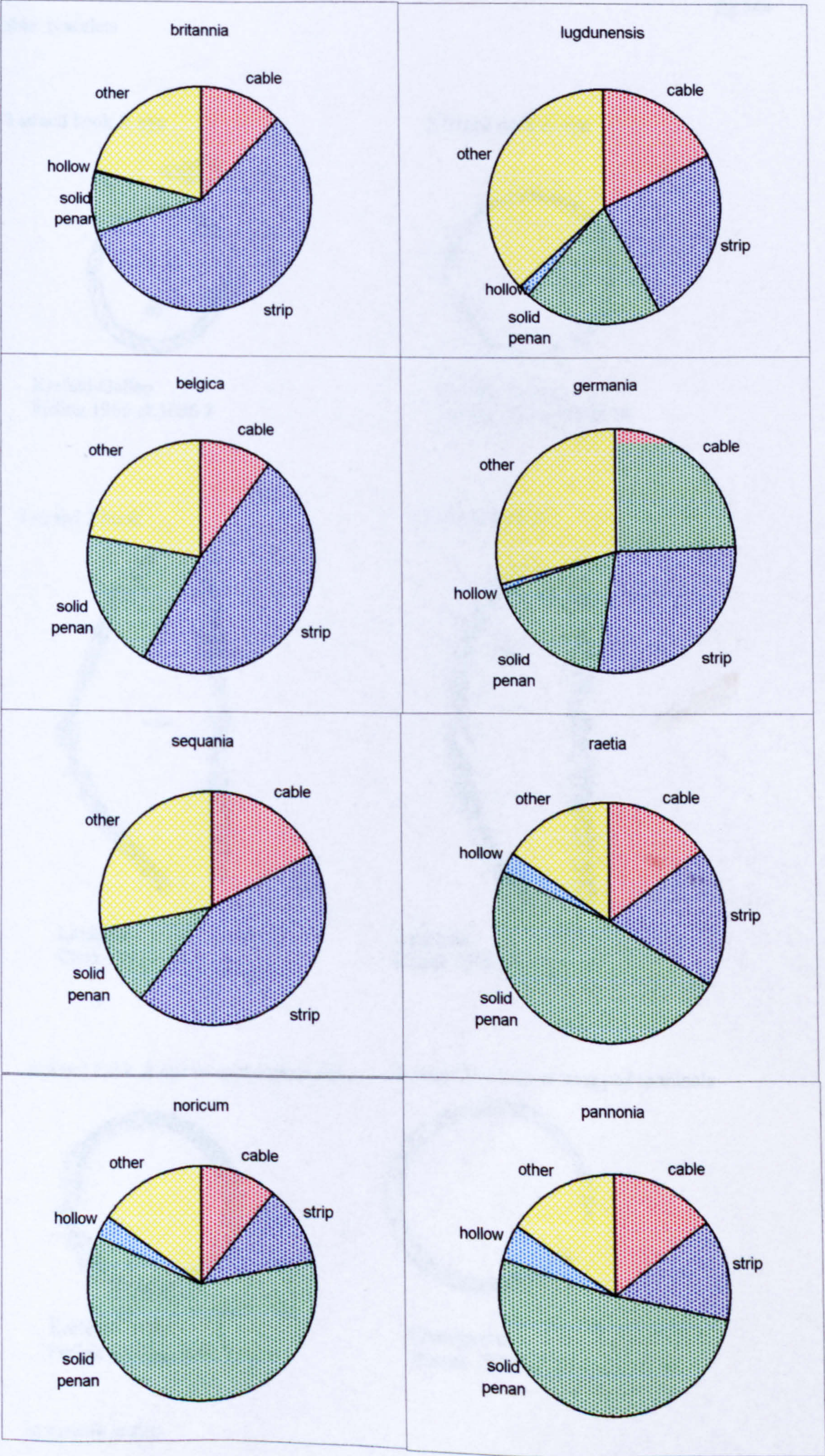




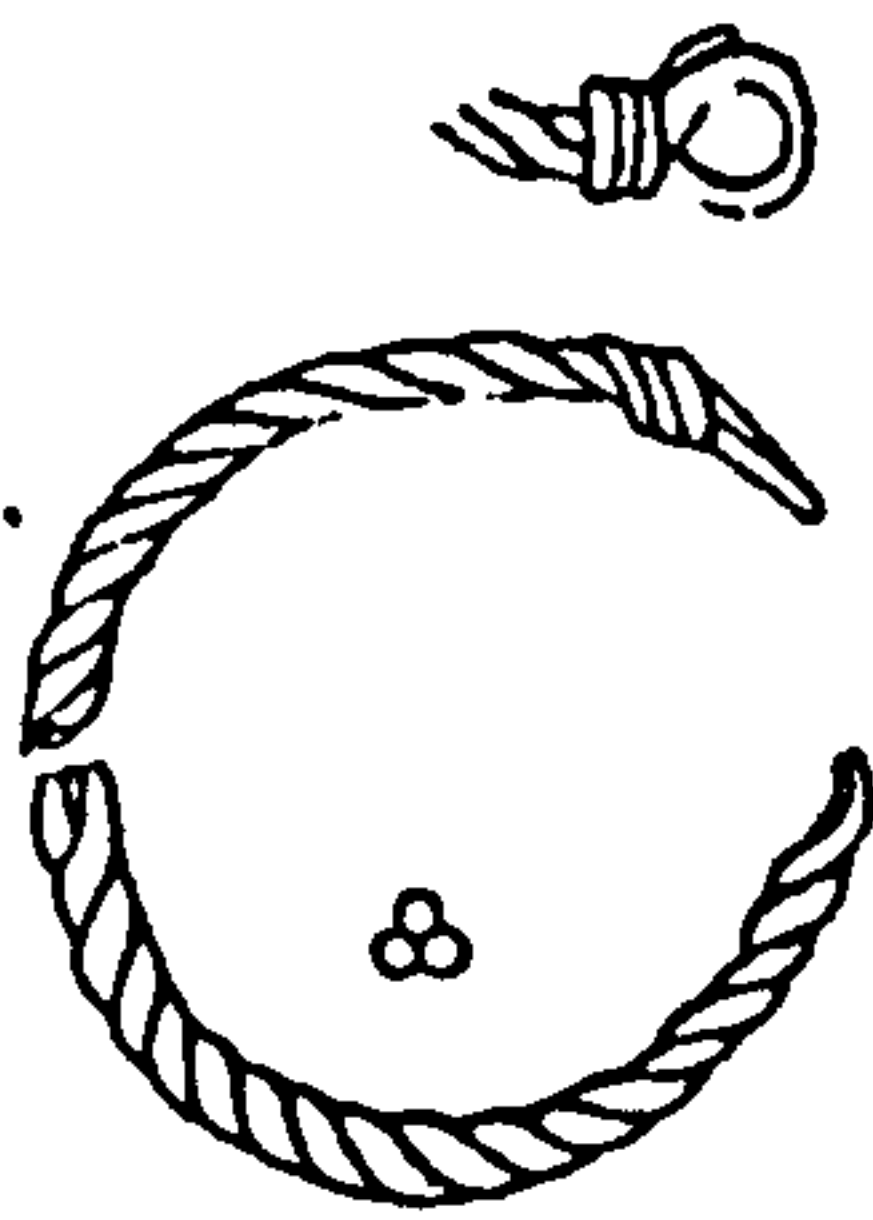
fig. 143





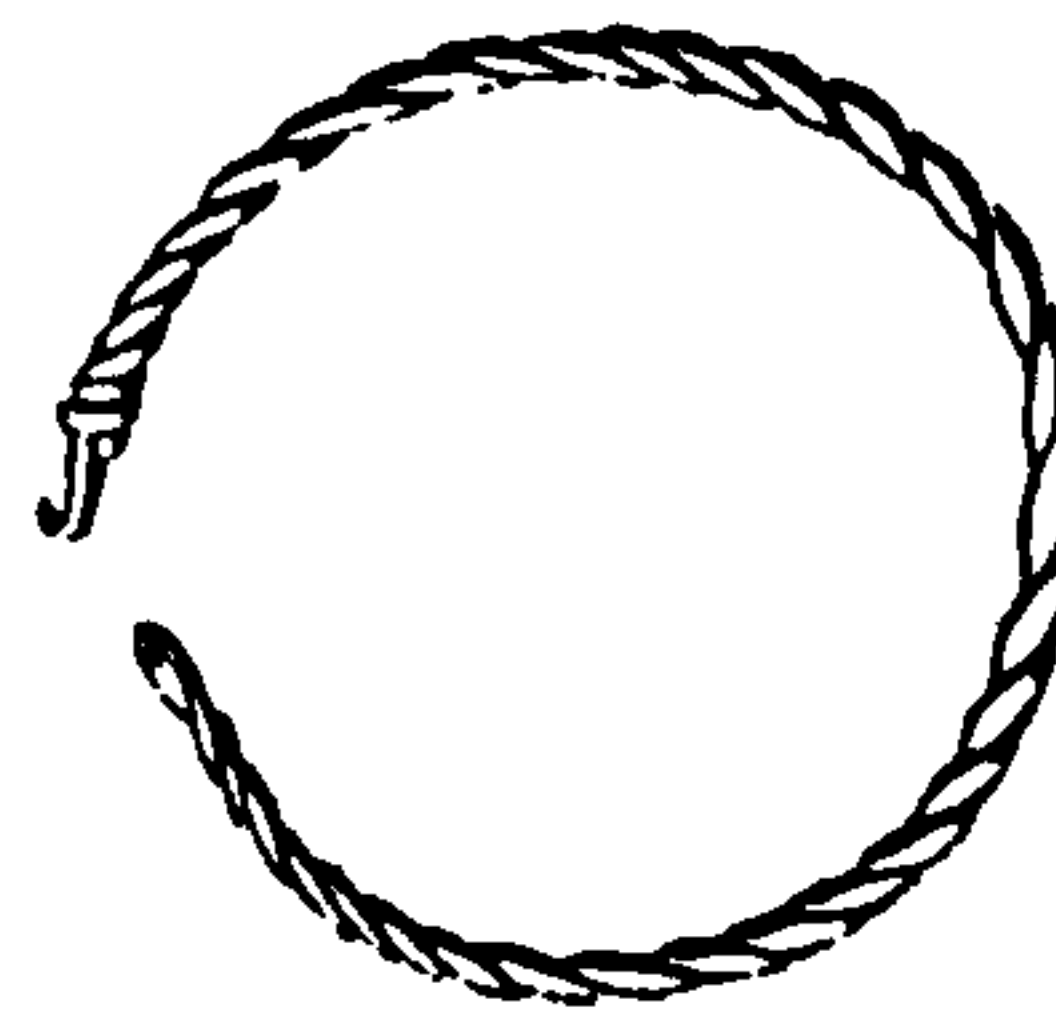
Cable bracelets

3 strand hook & eye



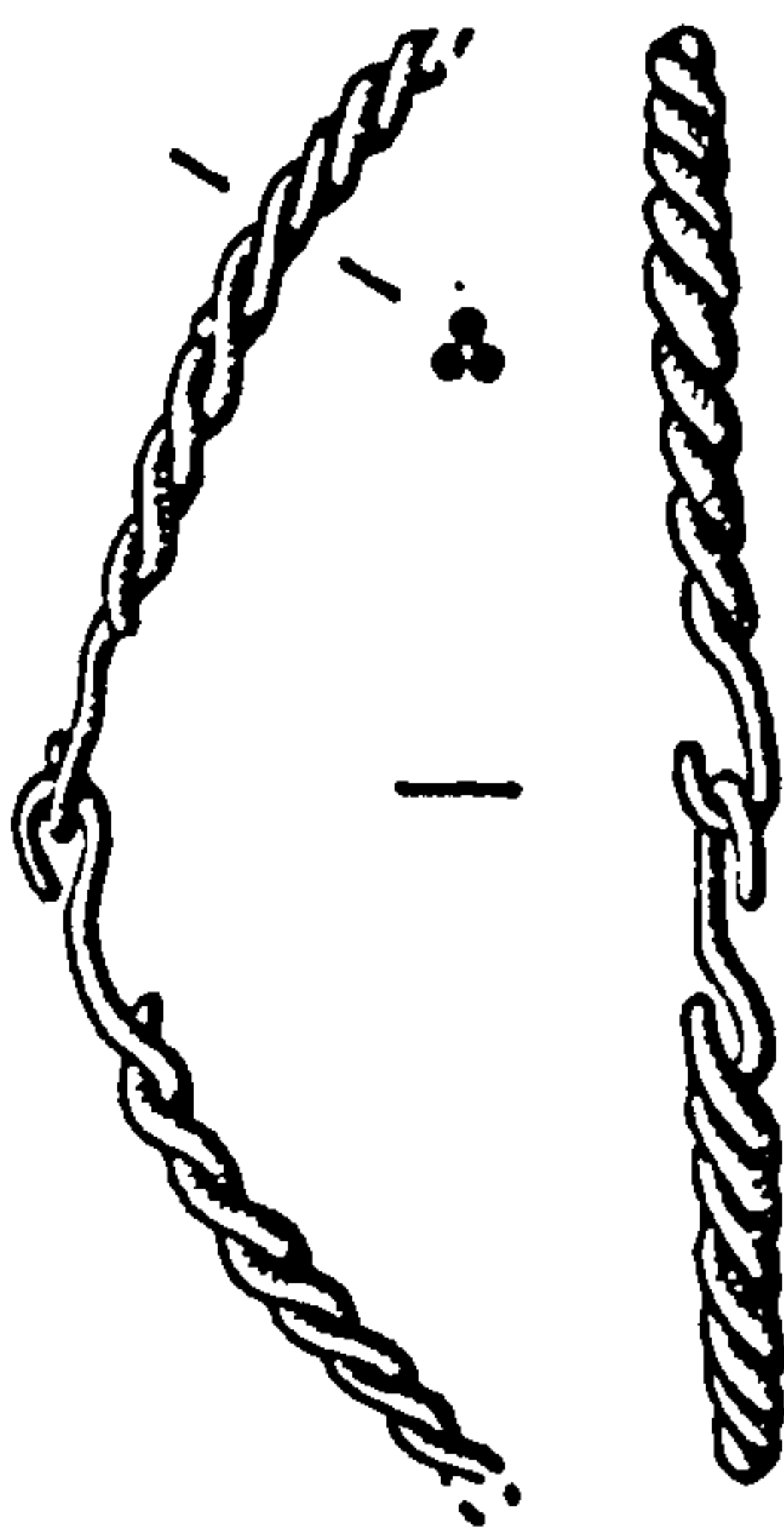
Krefeld-Gellep  
Pirling 1966 gr.1036 2

2 strand hook & eye



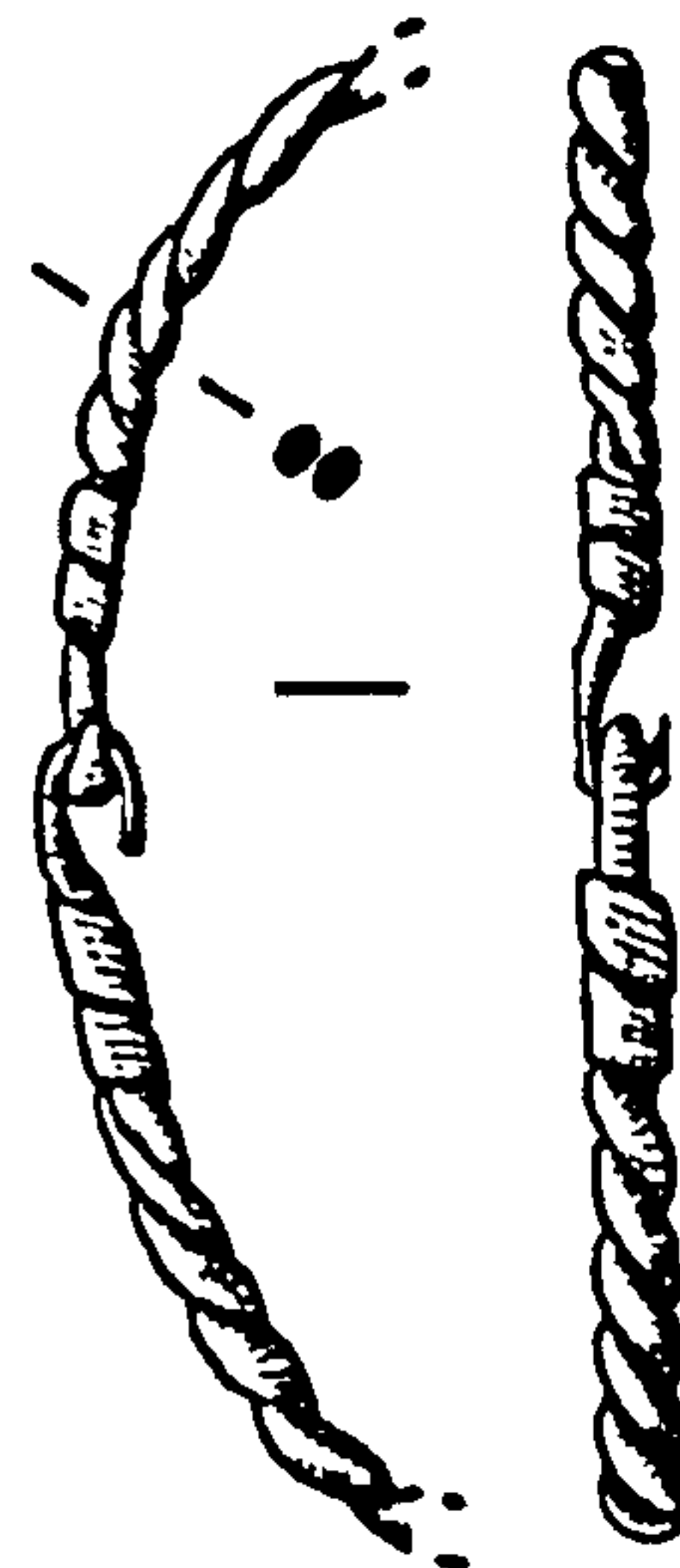
Krefeld-Gellep  
Pirling 1974 gr.1492 10

3 strand 2 hook



Lankhills  
Clarke 1979 84

2 strand 2 hook



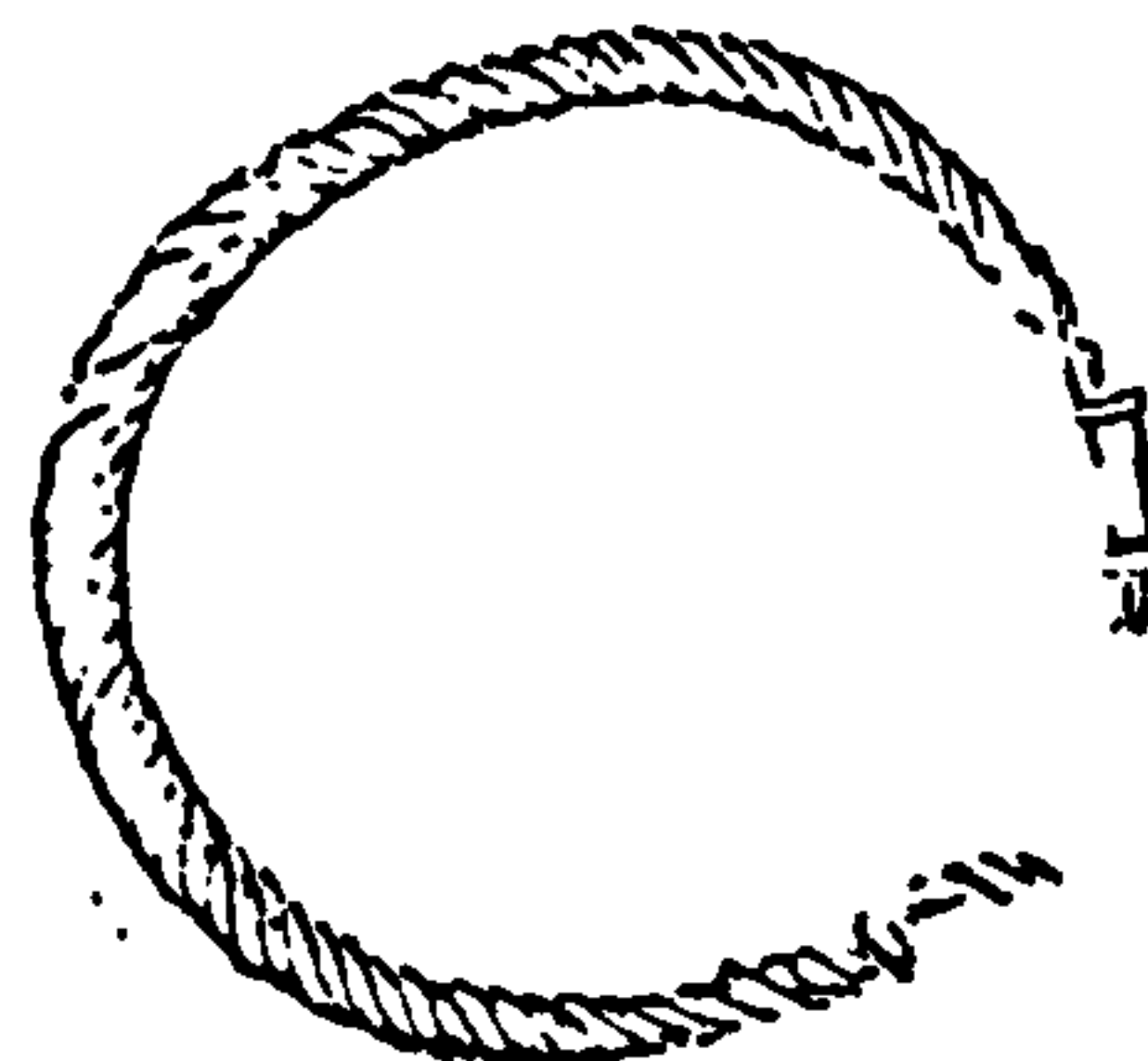
Lankhills  
Clarke 1979 SF.108

4strand hook & eye wrapped terminals



Krefeld-Gellep  
Pirling 1989 gr.3007 1

2 strand hook & eye wrapped terminals



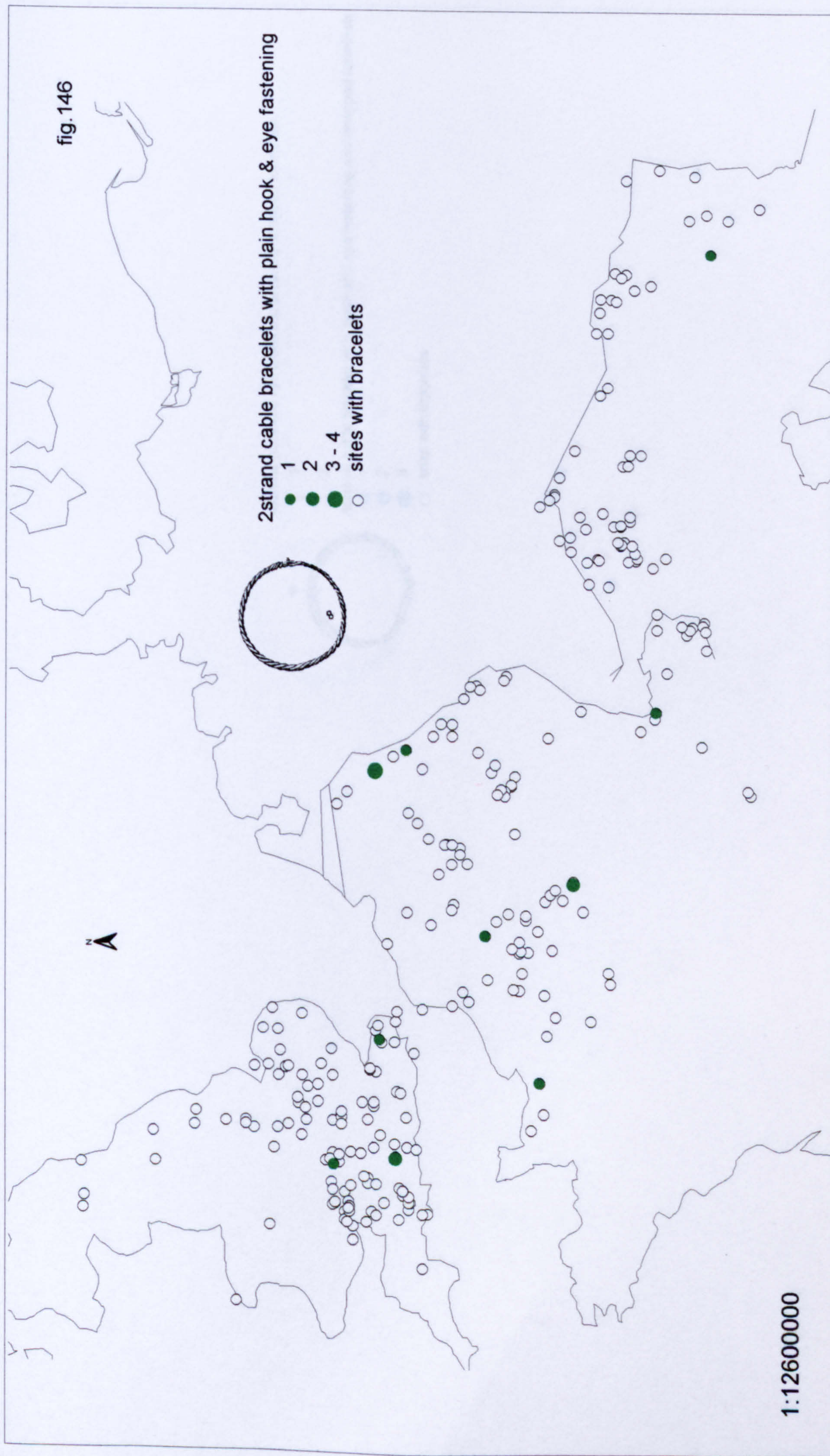
Somogyszil  
Burger 1979 gr.77 5

at varying scales

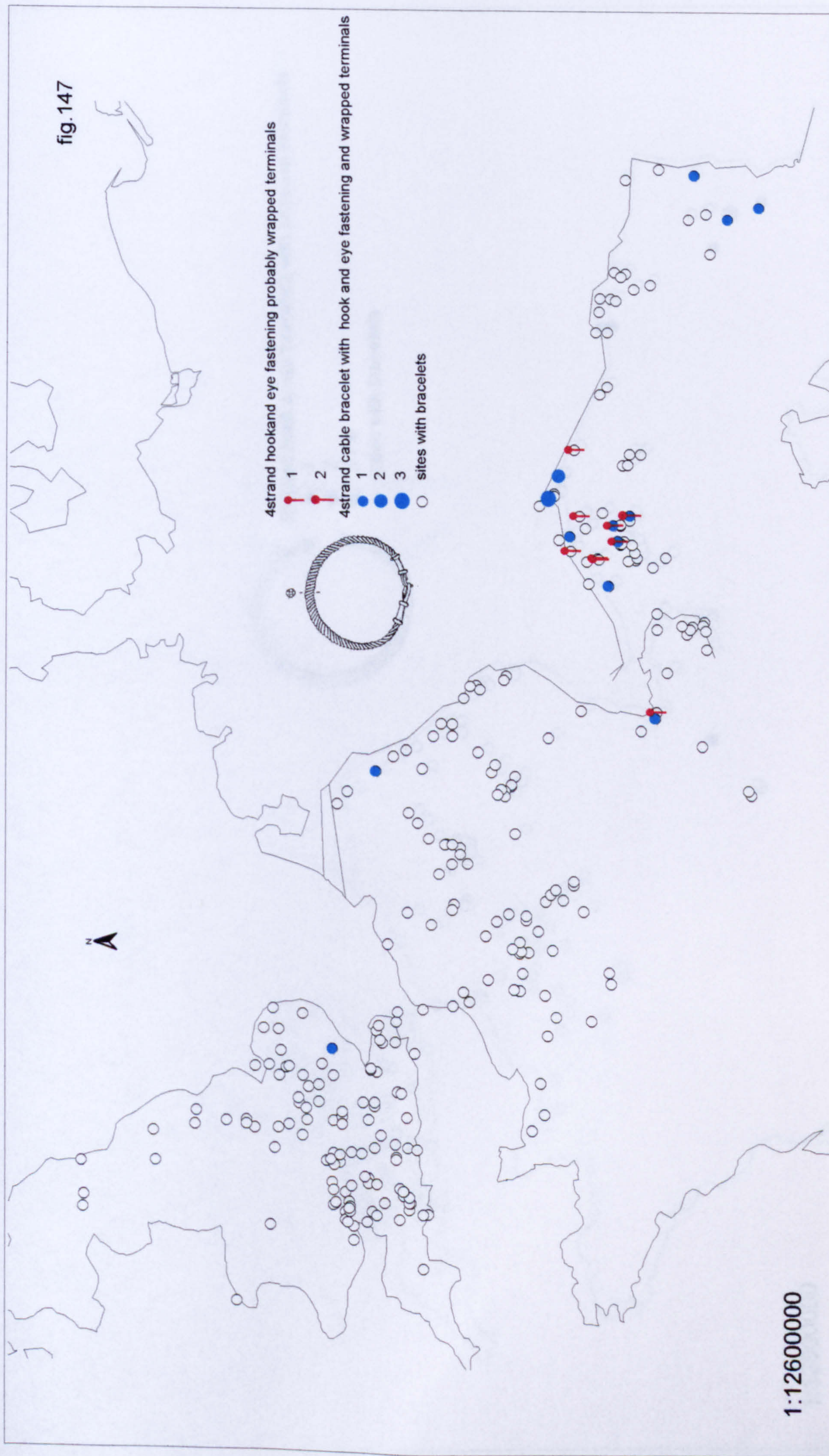














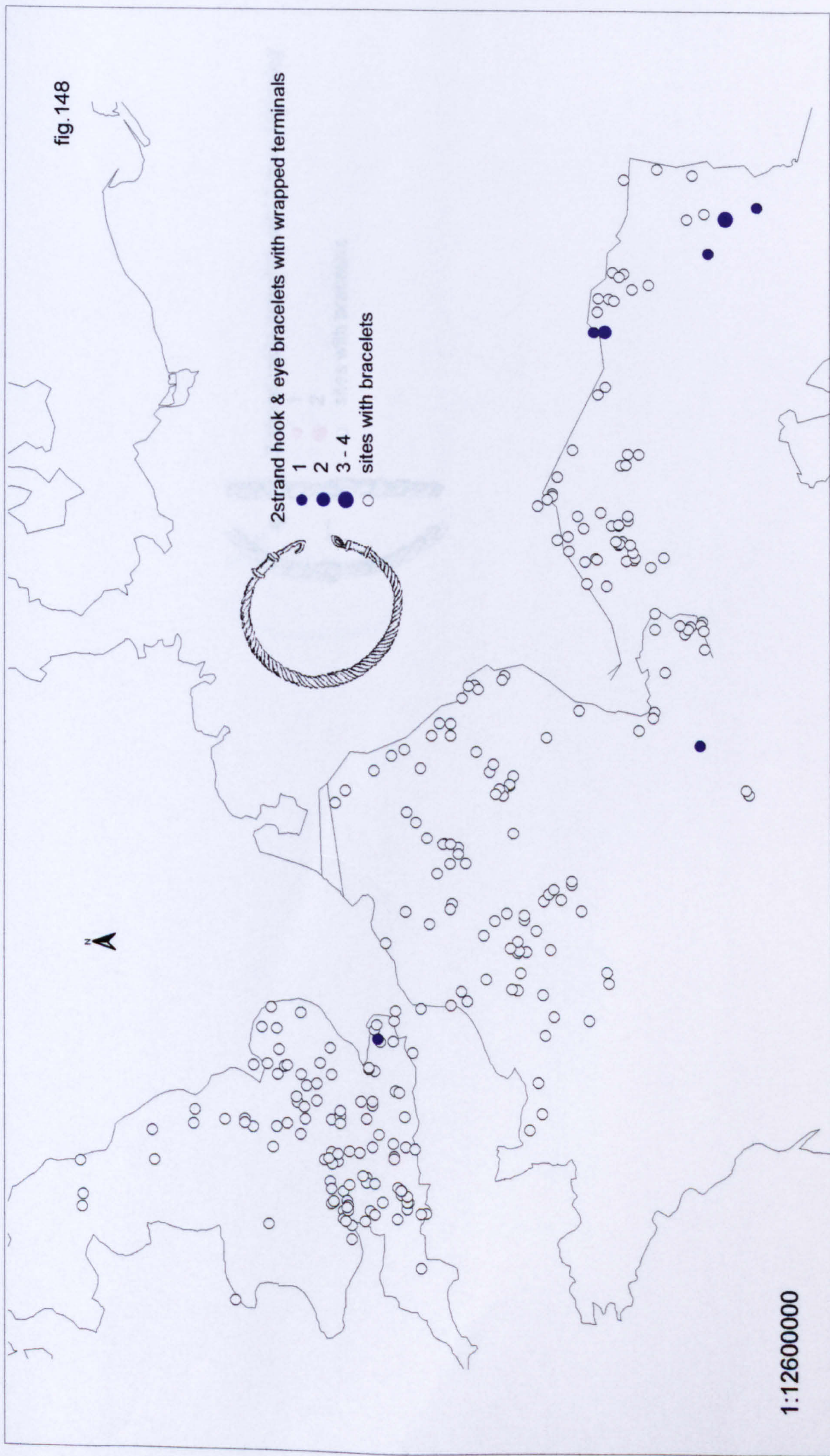
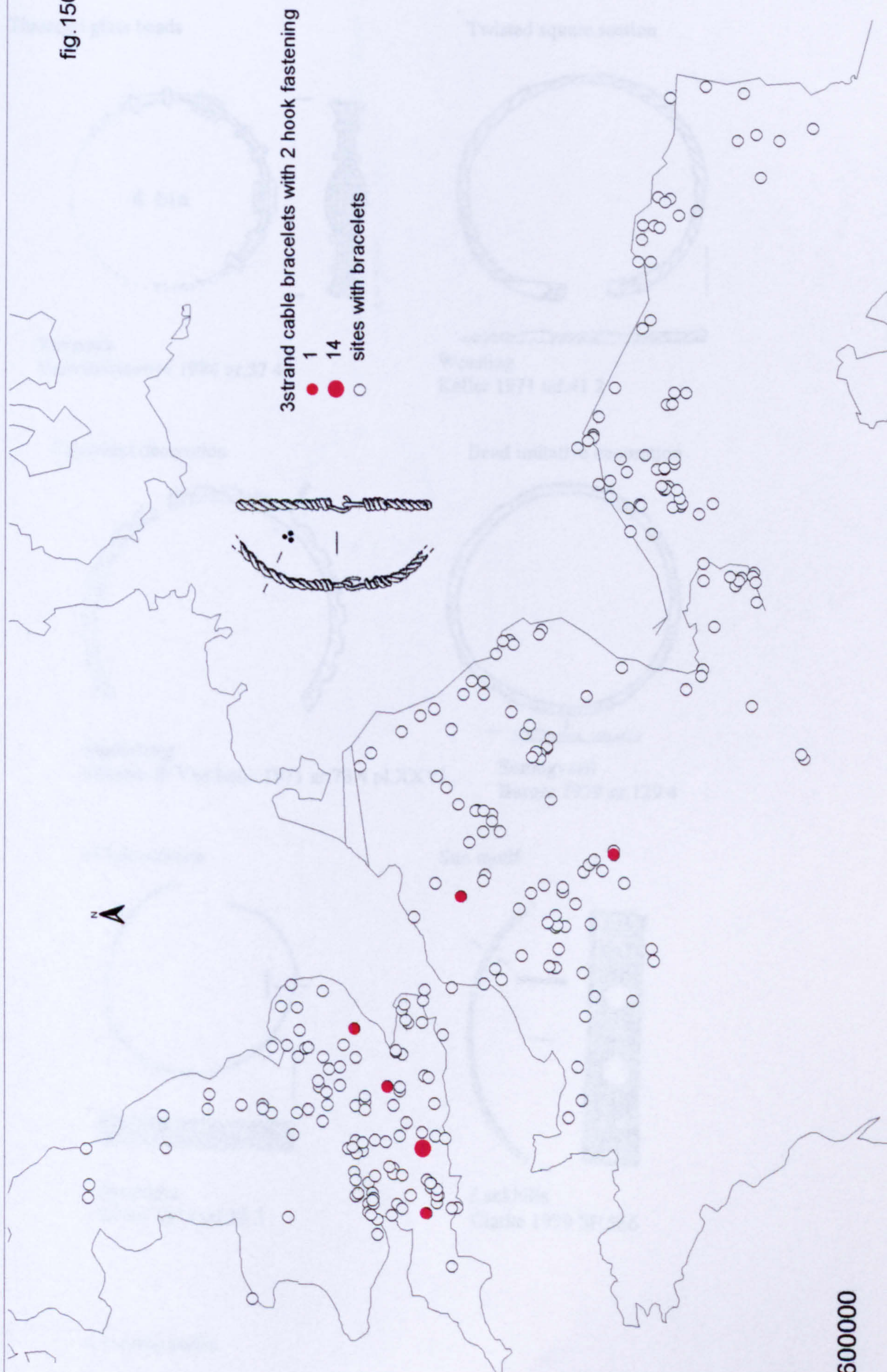






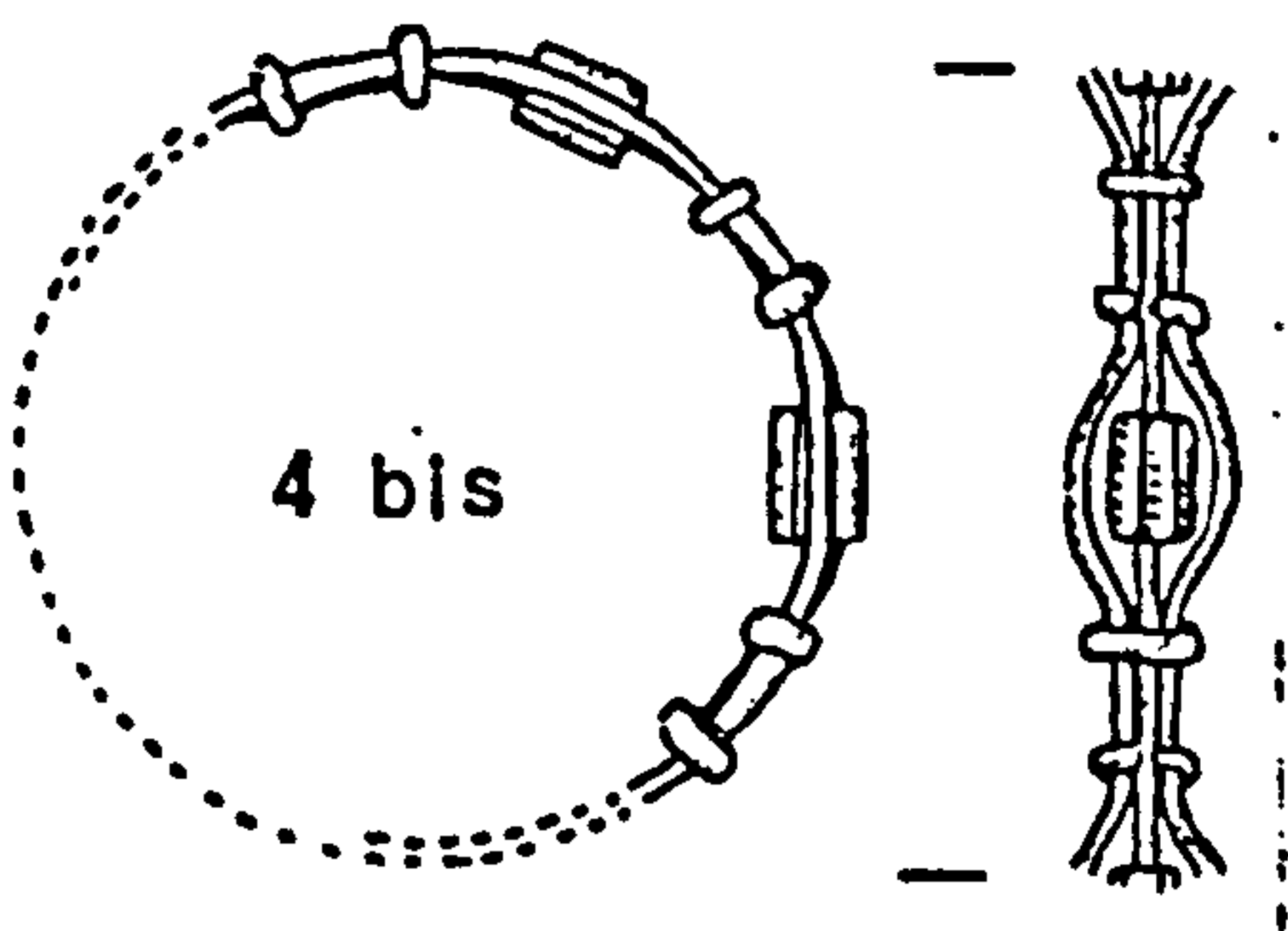


fig. 150



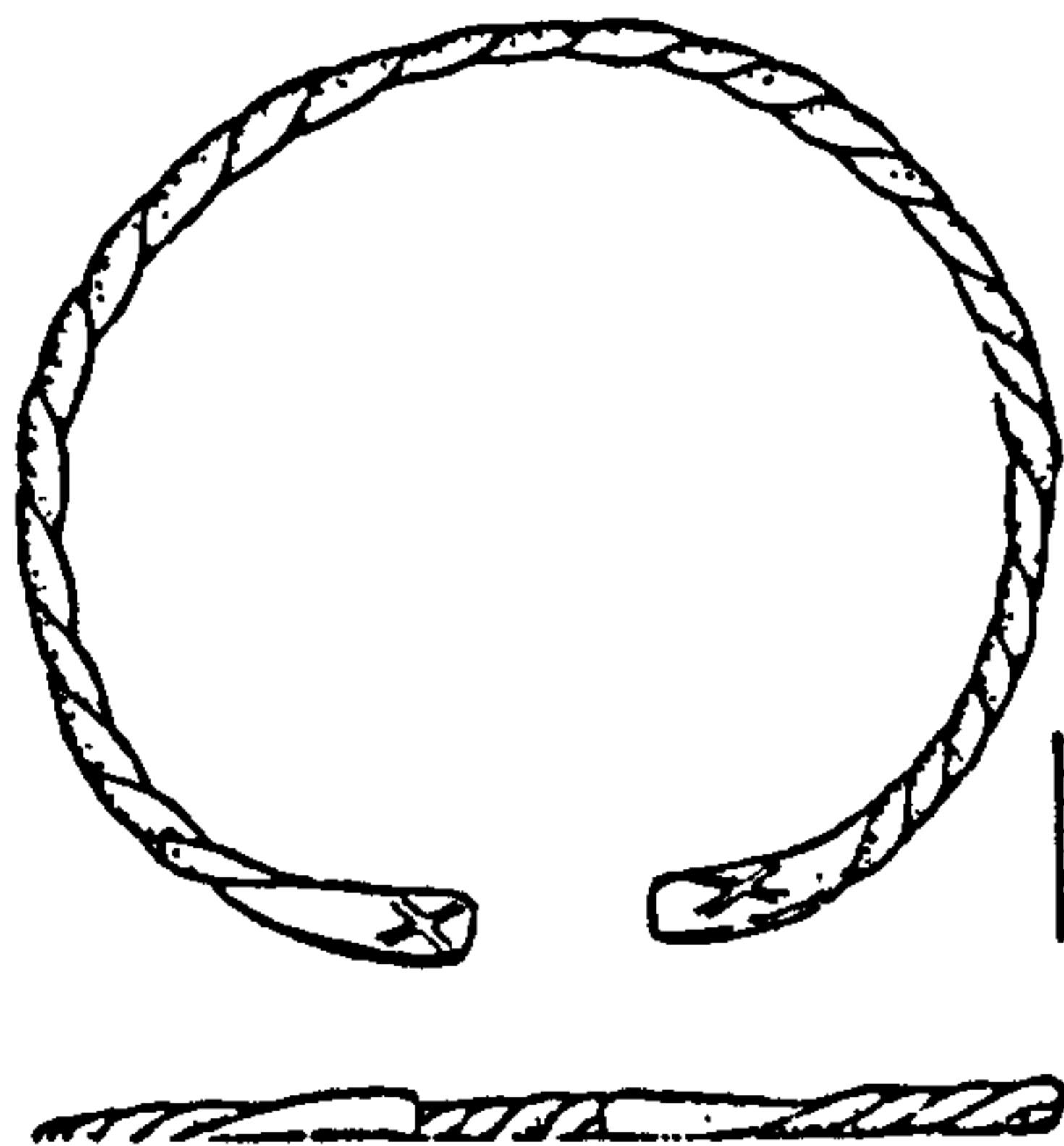


Threaded glass beads



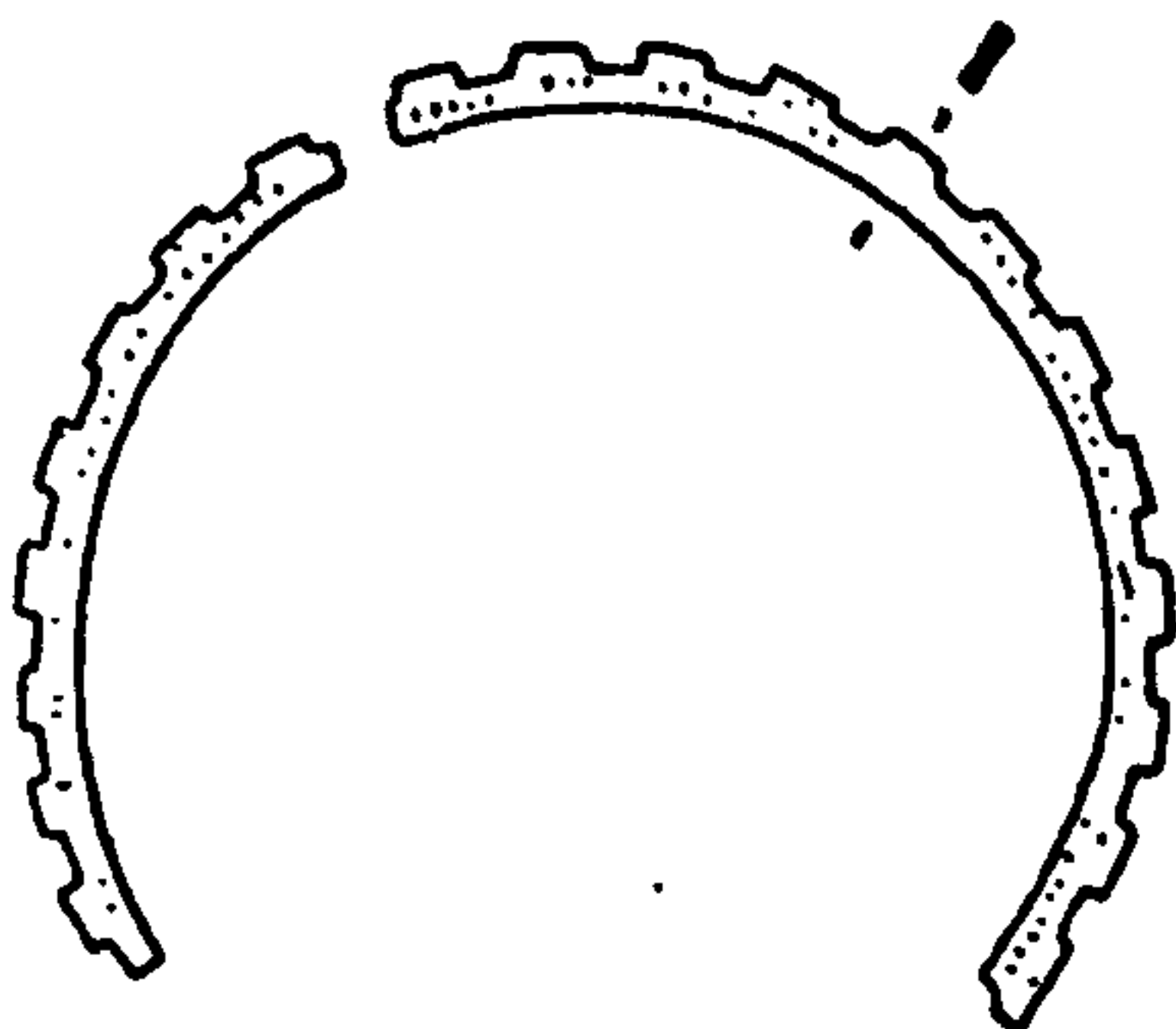
Tongeren  
Vanvinckenroye 1984 gr.37 4

Twisted square section



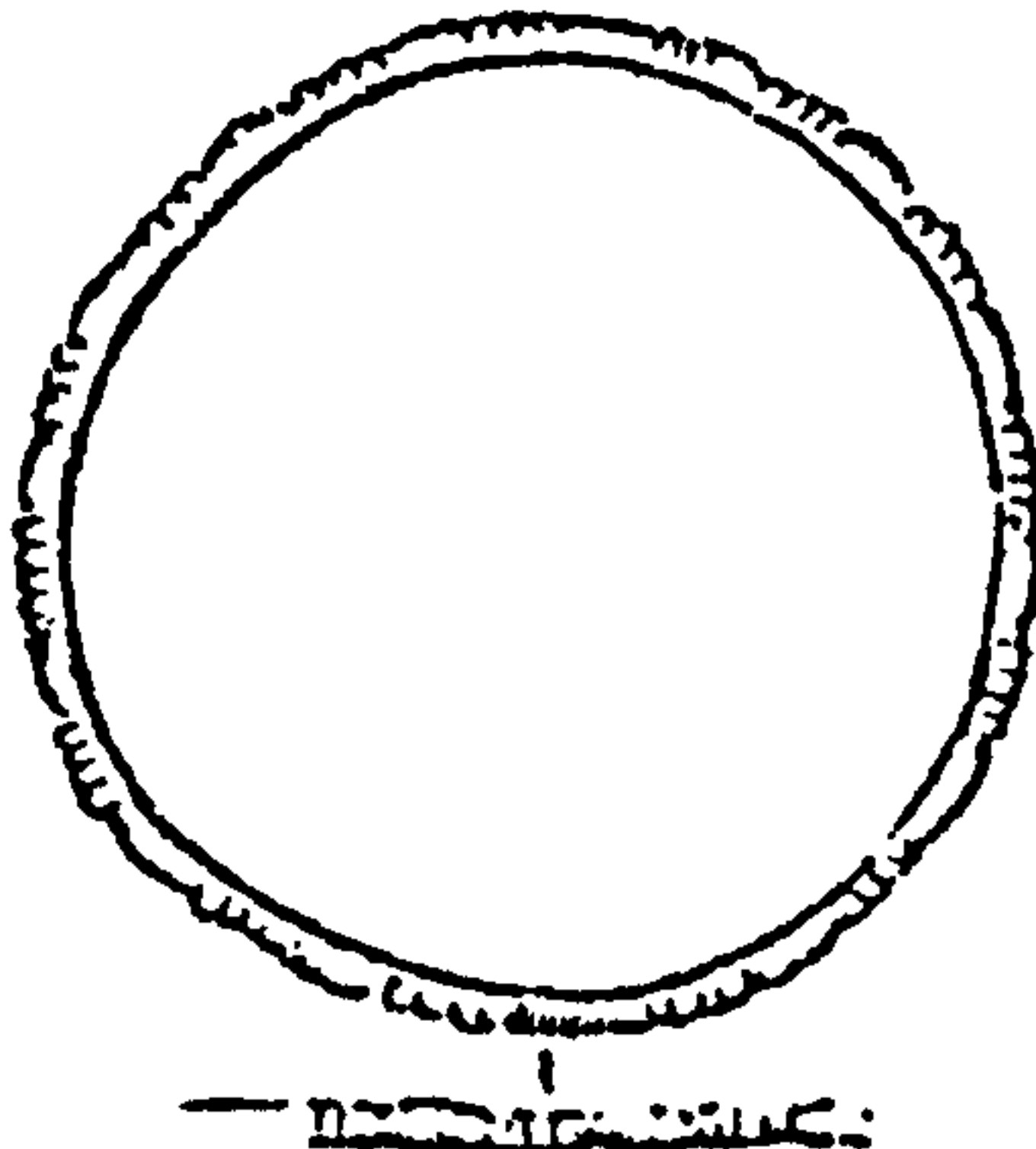
Wessling  
Keller 1971 taf.41 2

Cogwheel decoration



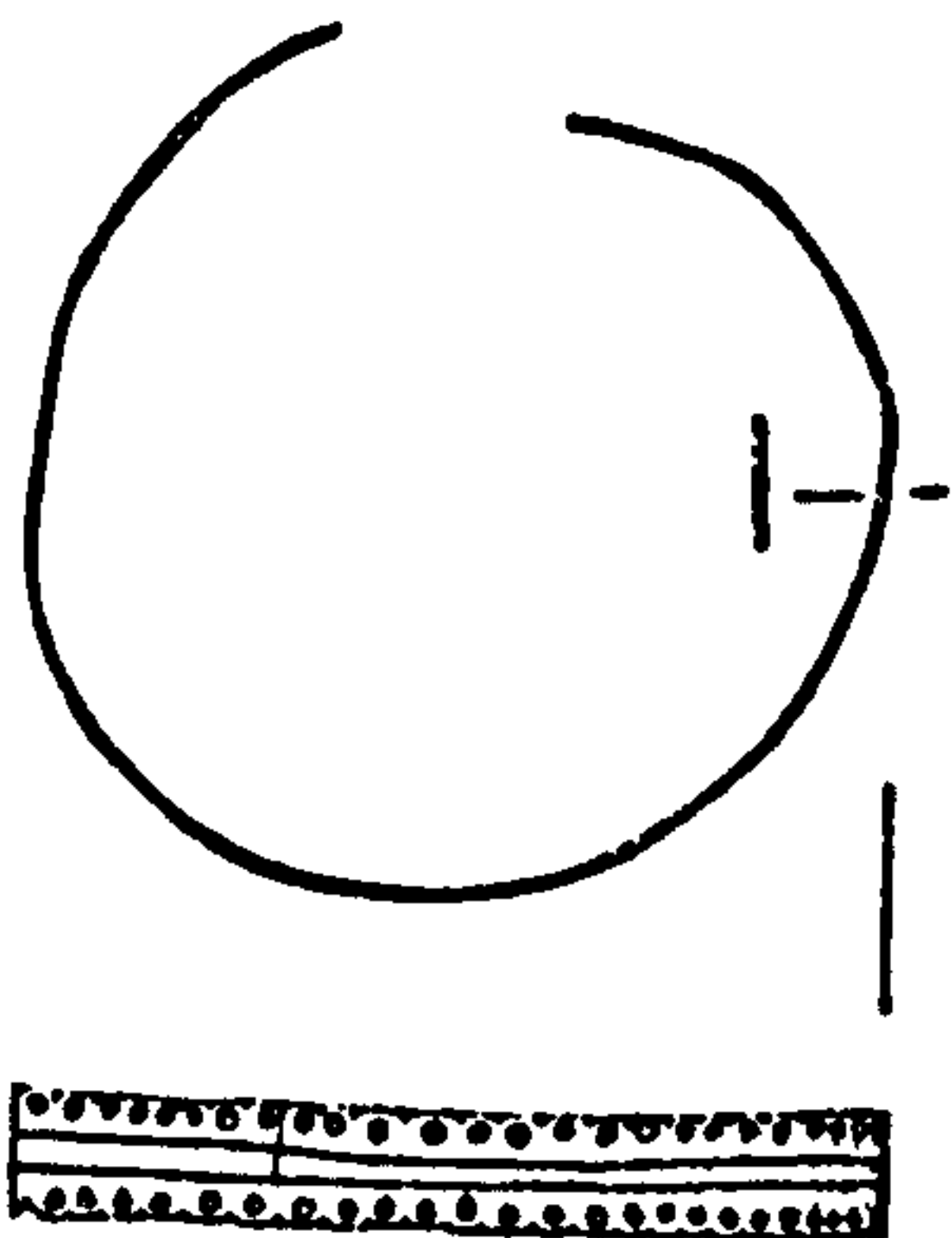
Oudenburg  
Mertens & Van Impe 1971 gr.78 4 pl.XXVI

Bead imitative decoration



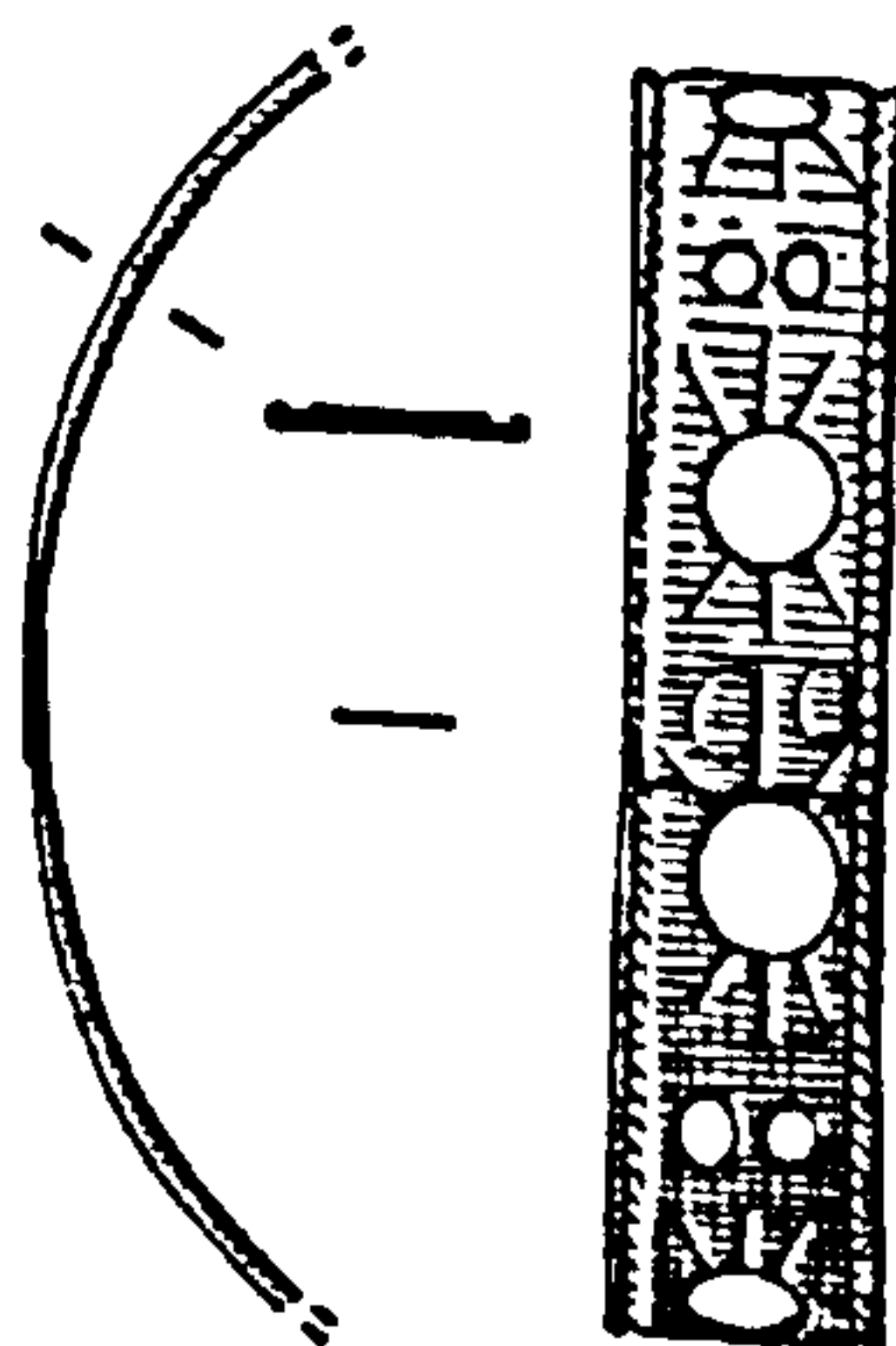
Somogyszil  
Burger 1979 gr.129 4

b13 decoration



Burgheim  
Keller 1971 taf.15 3

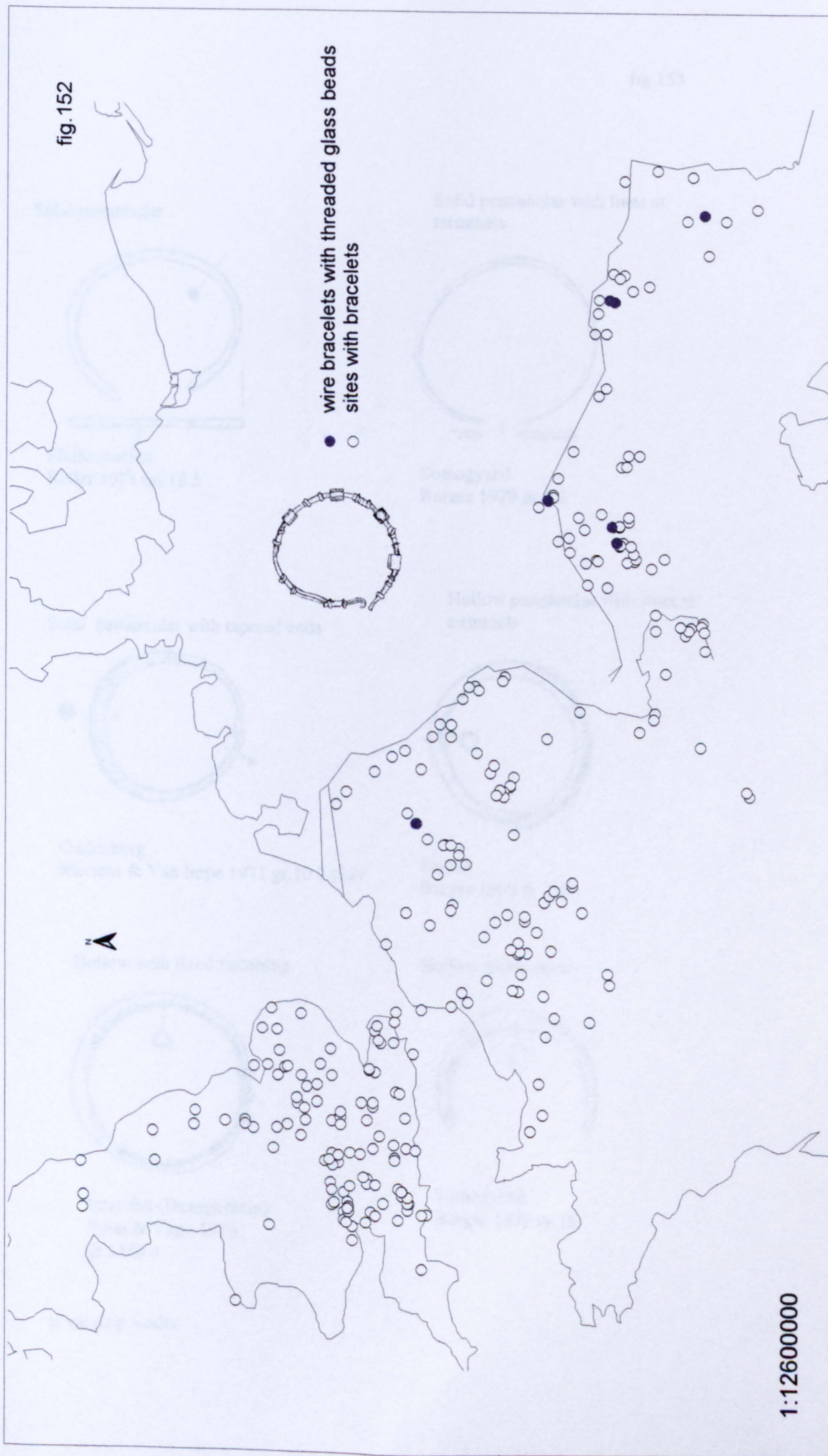
Sun motif



Lankhills  
Clarke 1979 SF.566

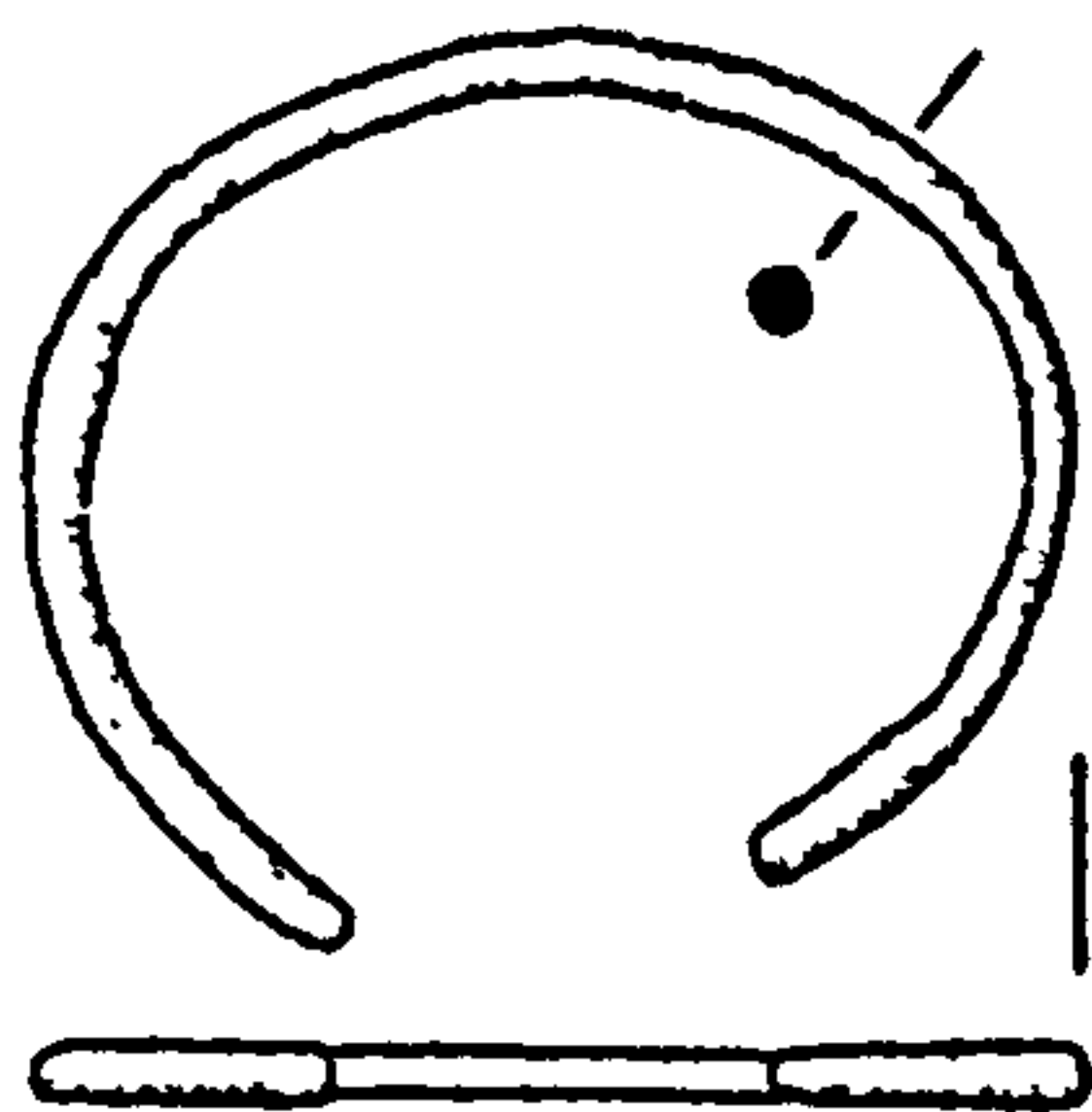
at varying scales





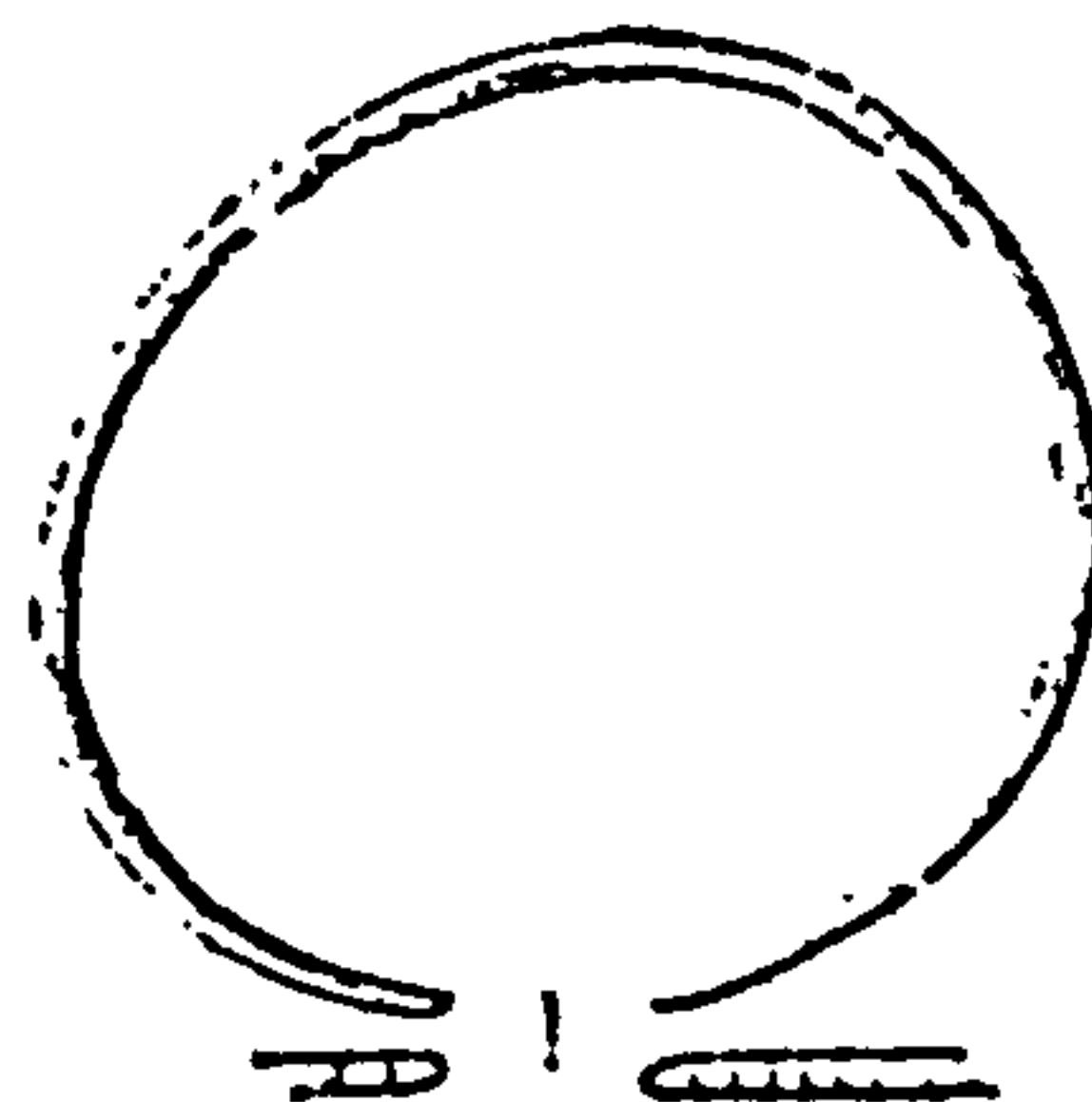


Solid penannular



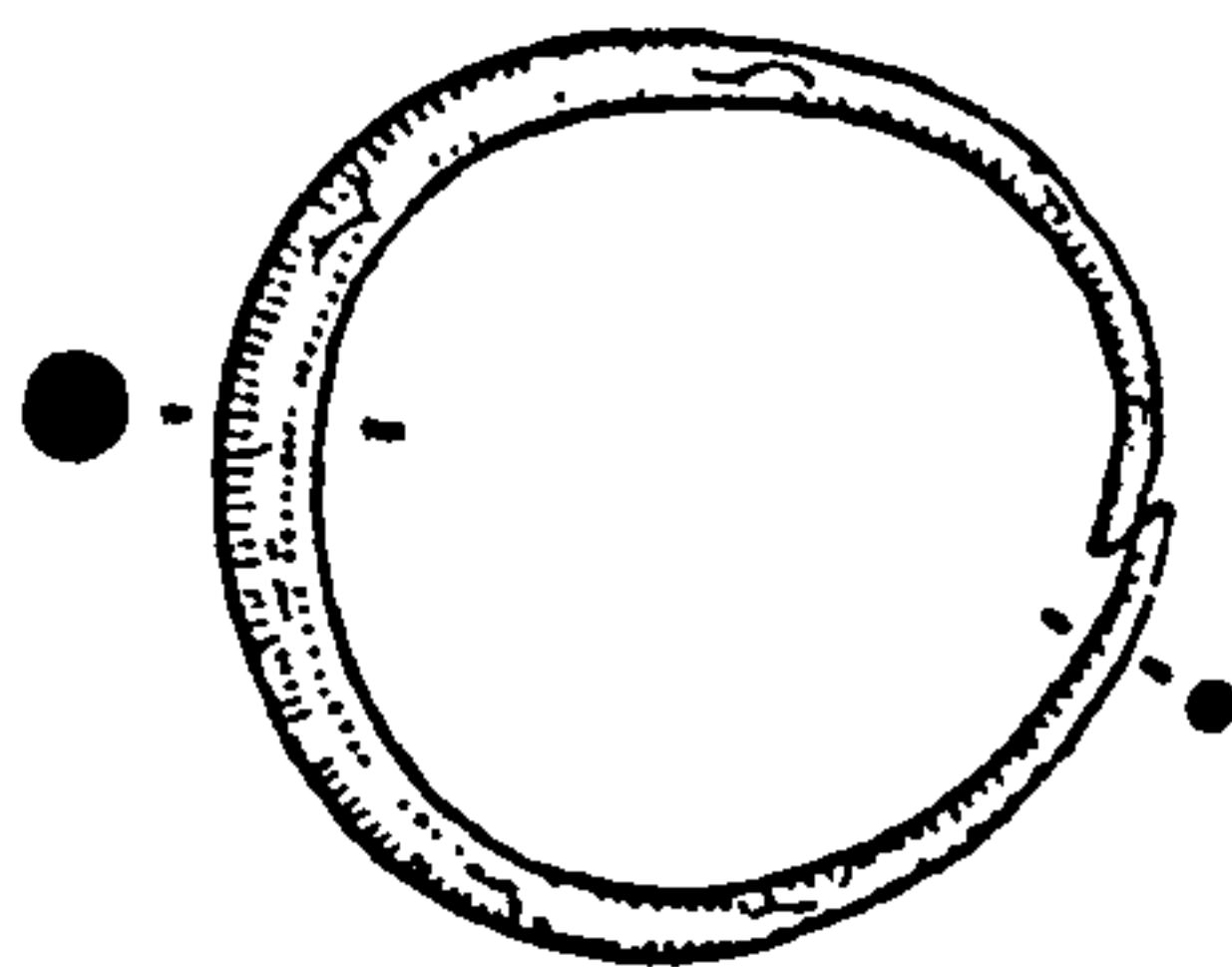
Pfaffenhoffen  
Keller 1971 taf.18 5

Solid penannular with lines at terminals



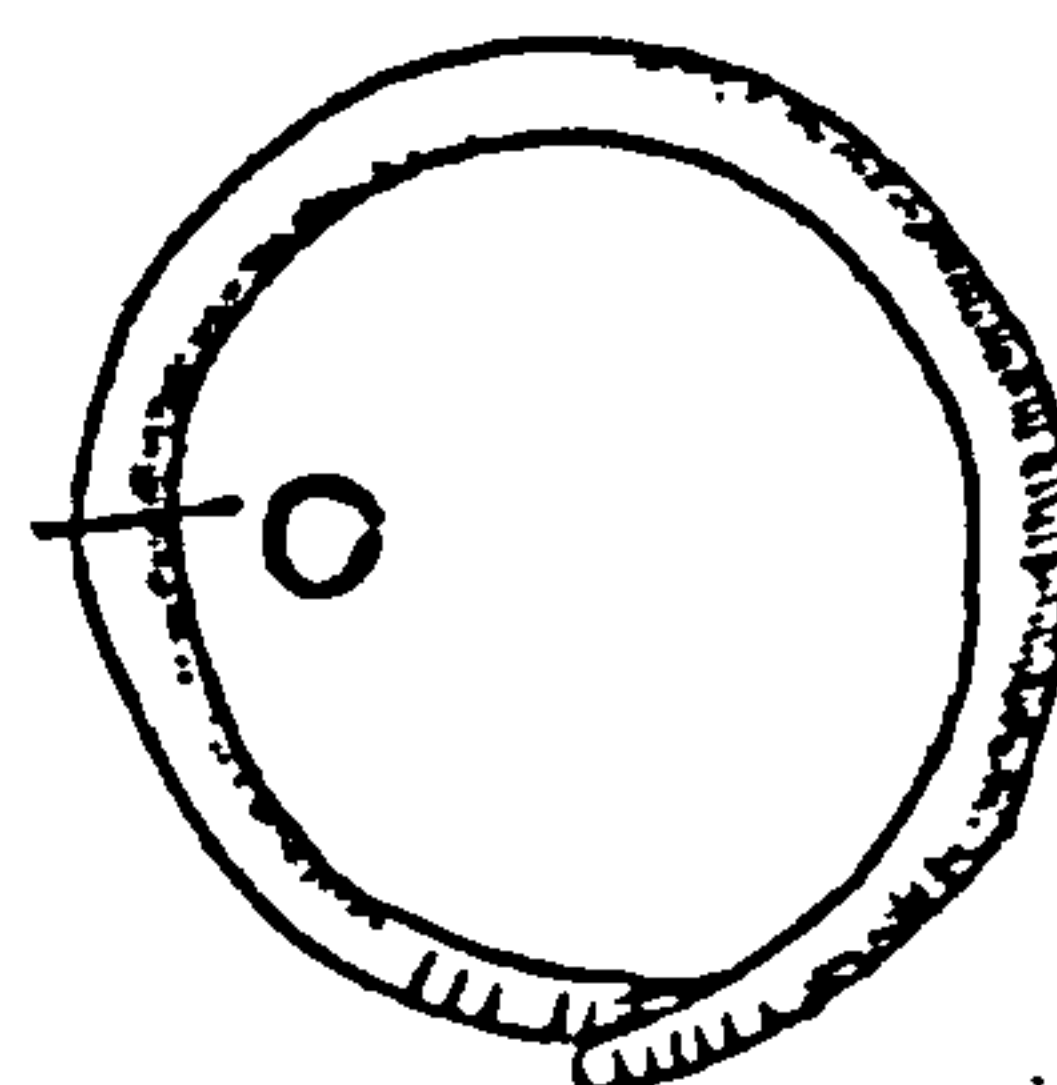
Somogyszil  
Burger 1979 gr.1 2

Solid penannular with tapered ends



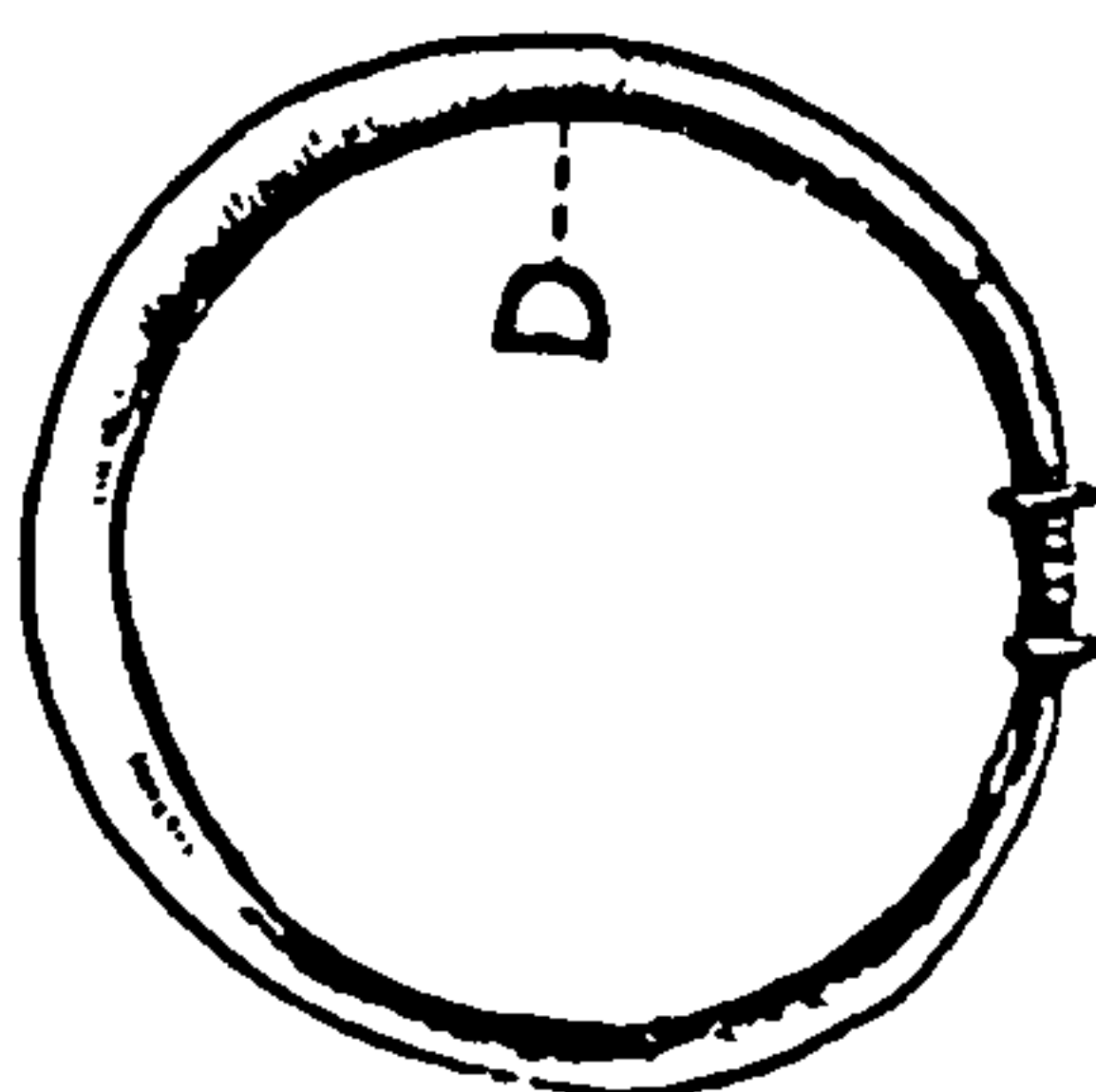
Oudenburg  
Mertens & Van Impe 1971 gr.10 2 pl.iv

Hollow penannular with lines at terminals



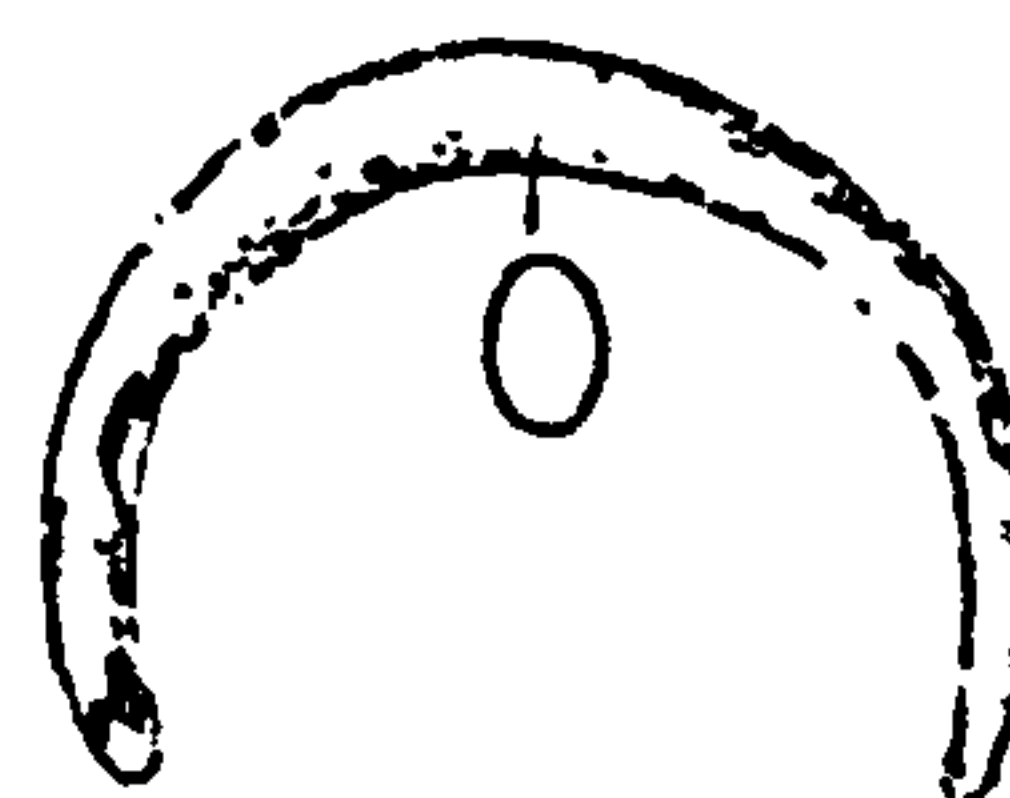
Sagvar  
Burger 1966 gr.328

Hollow with fixed fastening



Intercisa (Dunapentele)  
Bóna & Vágo 1976  
gr.1185 4

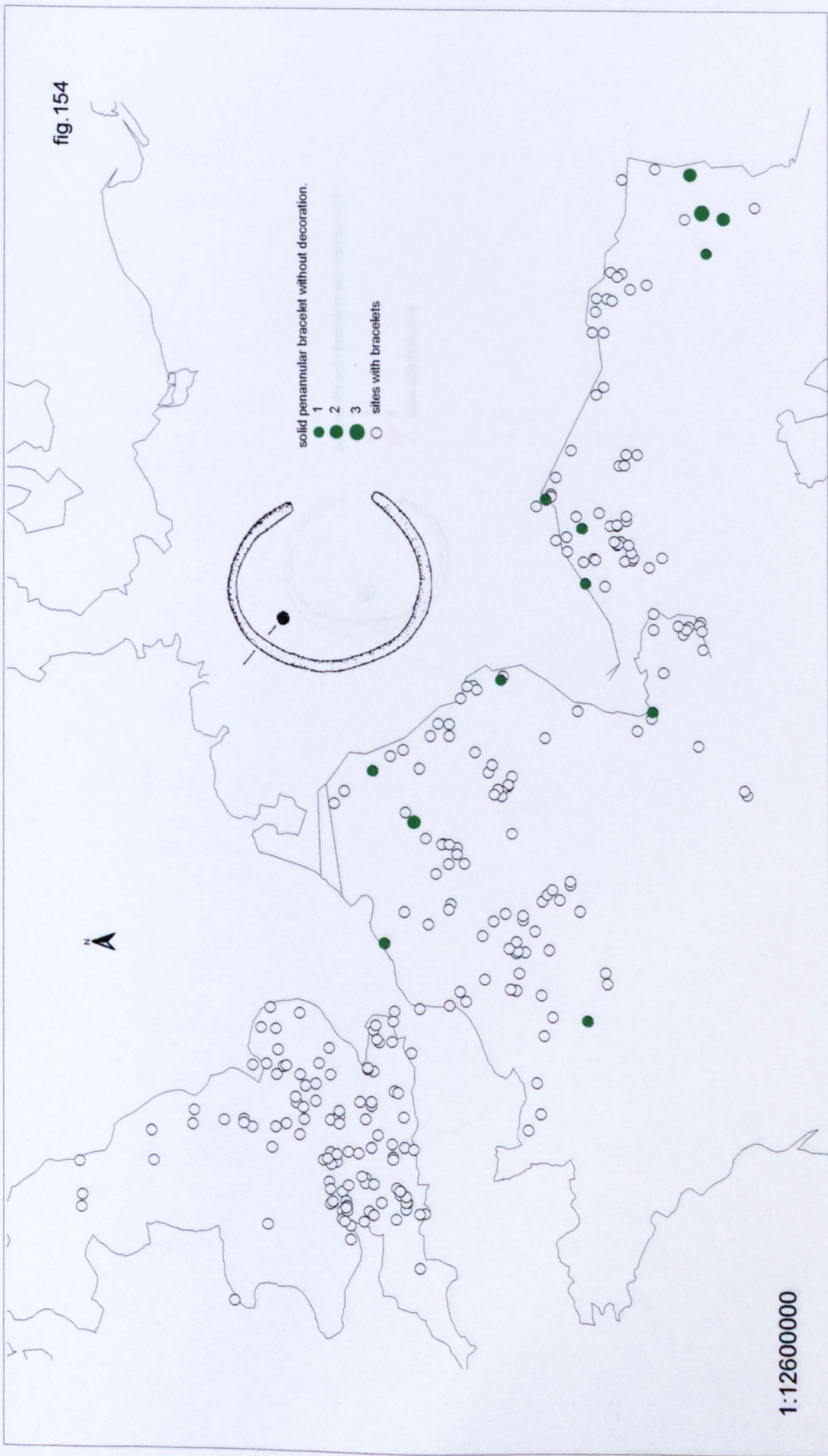
Hollow penannular



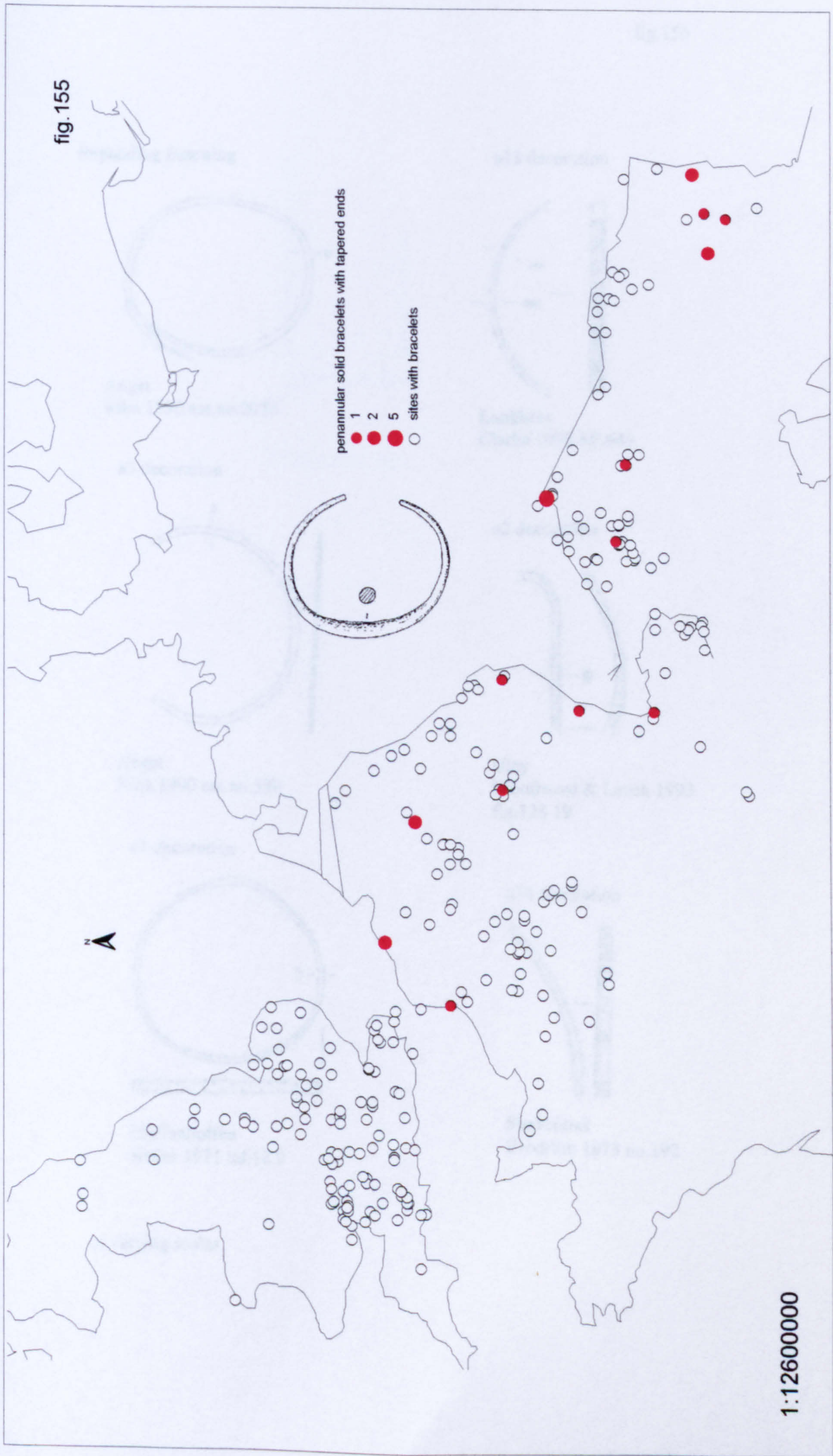
Somogyszil  
Burger 1979 gr.16

at varying scales



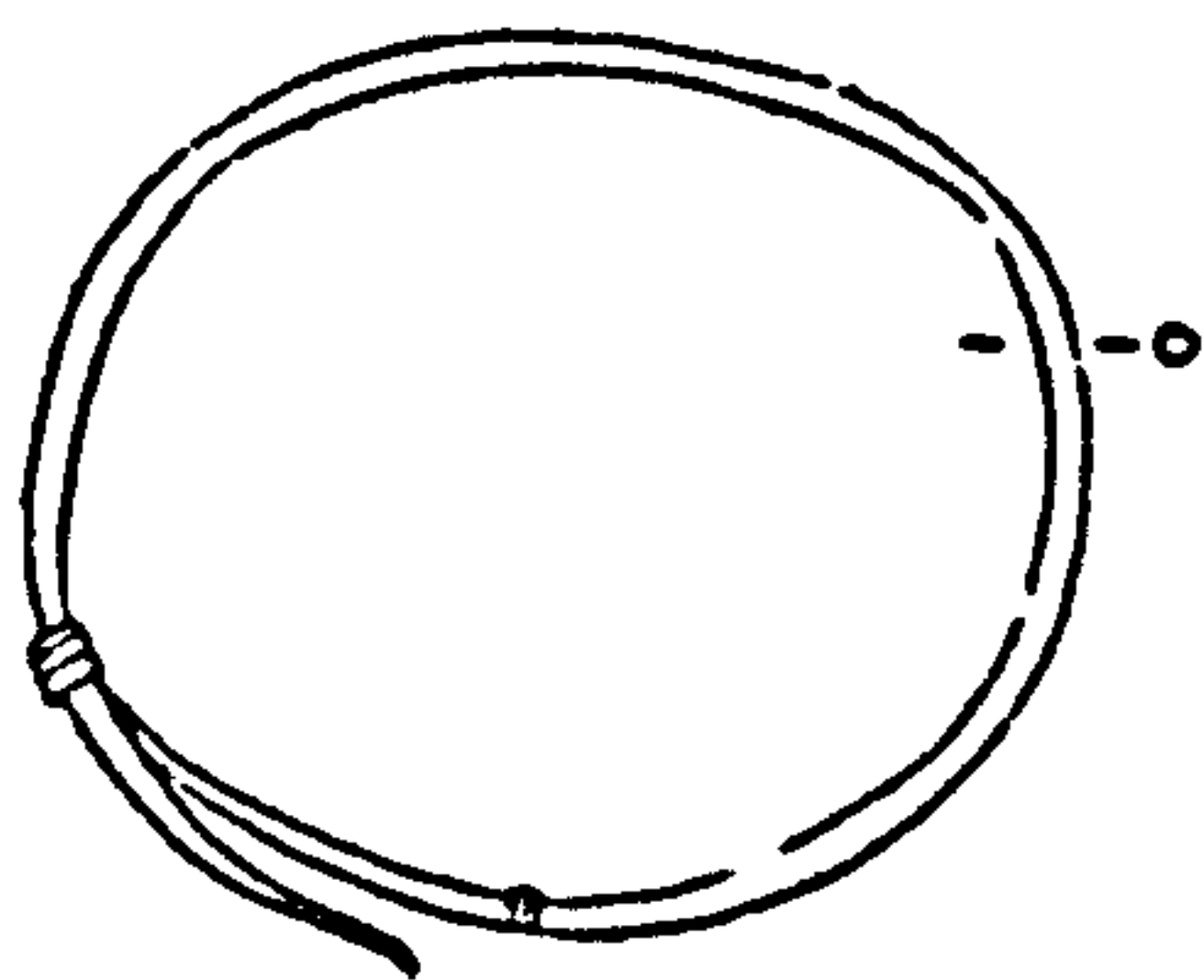






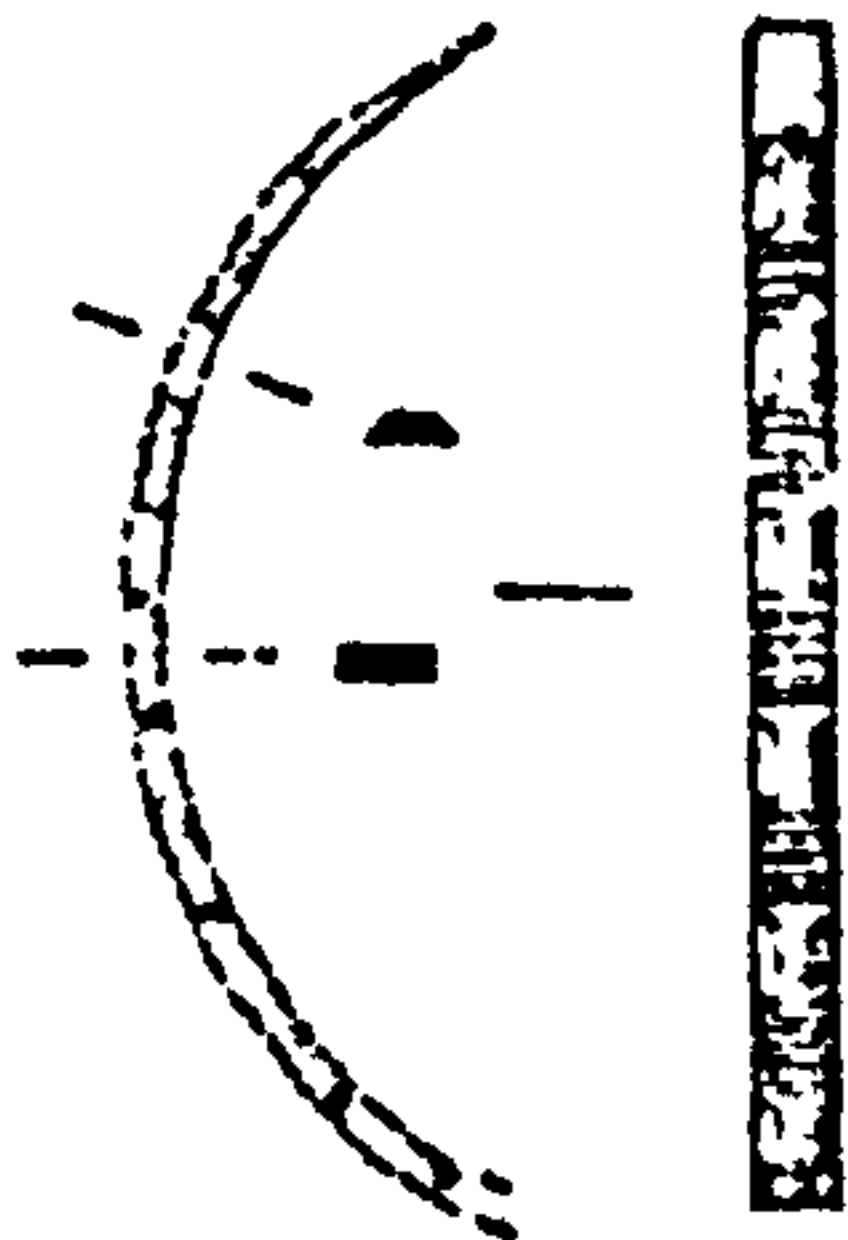


Expanding fastening



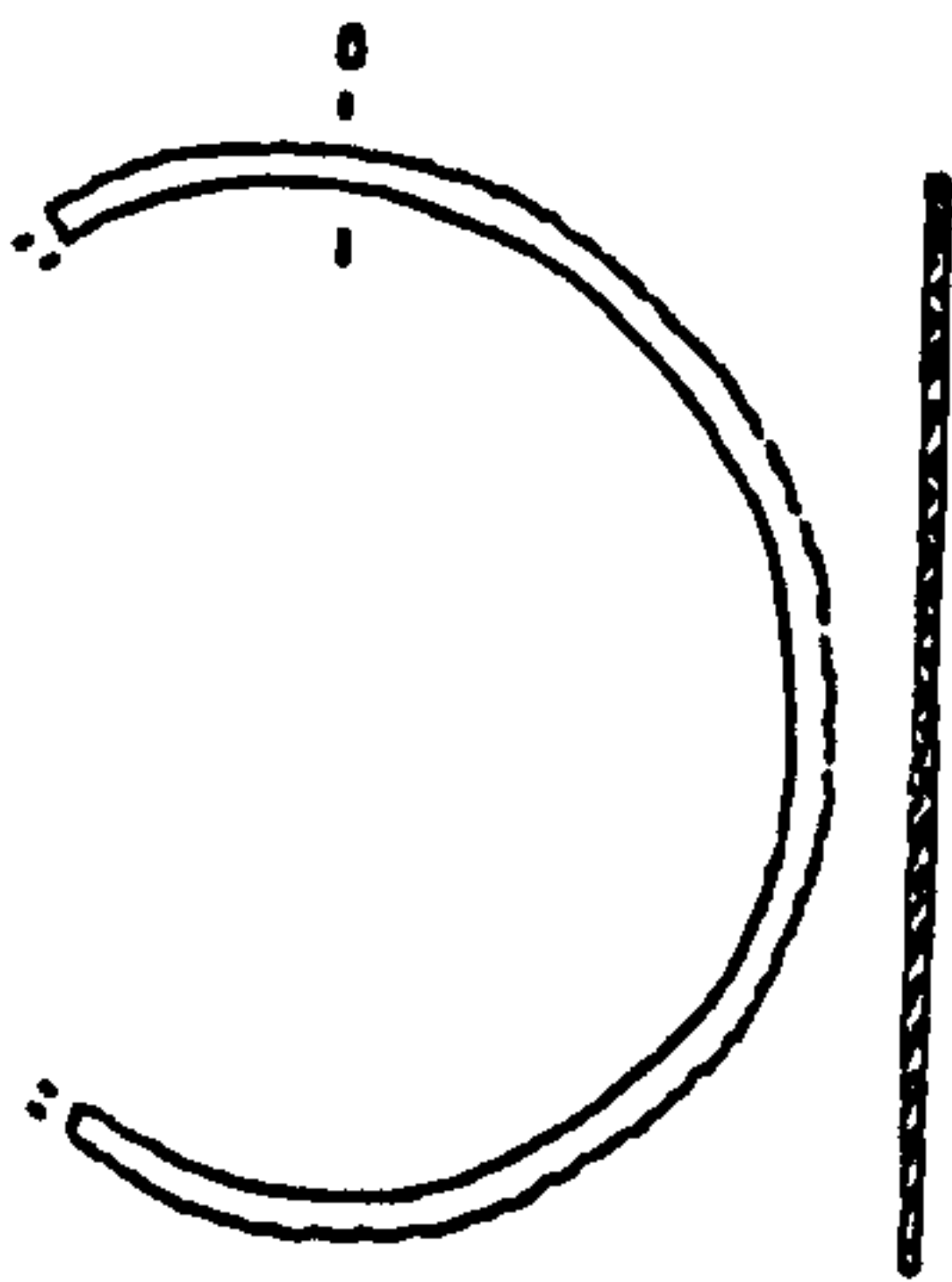
Augst  
Riha 1990 cat.no.2926

a13 decoration



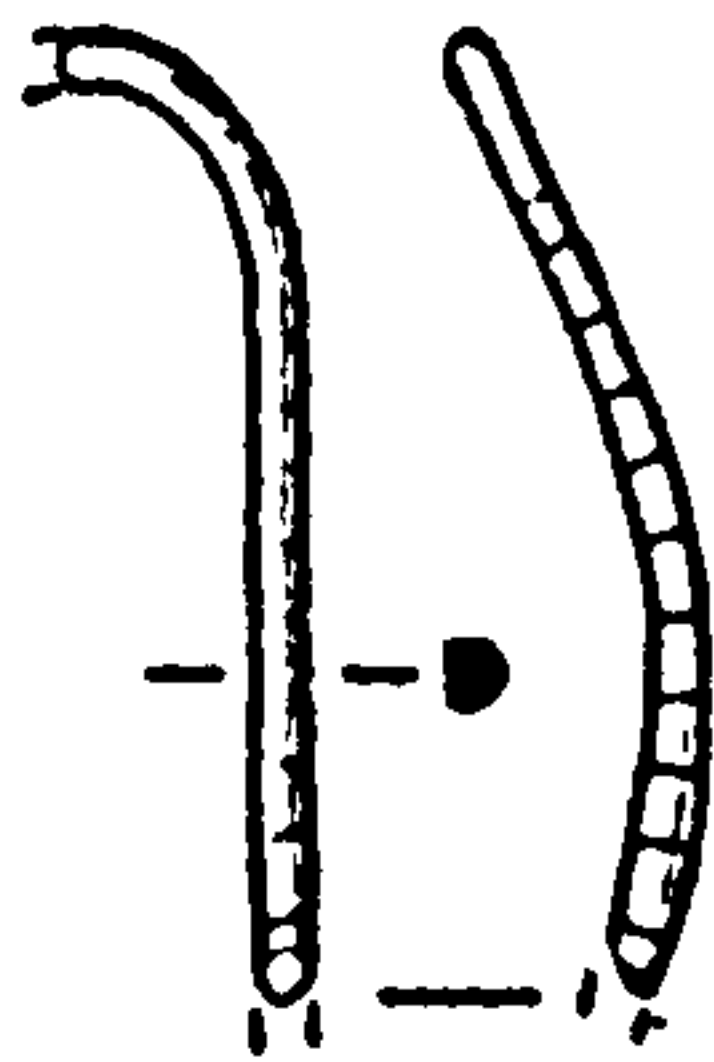
Lankhills  
Clarke 1979 SF.649

a5 decoration



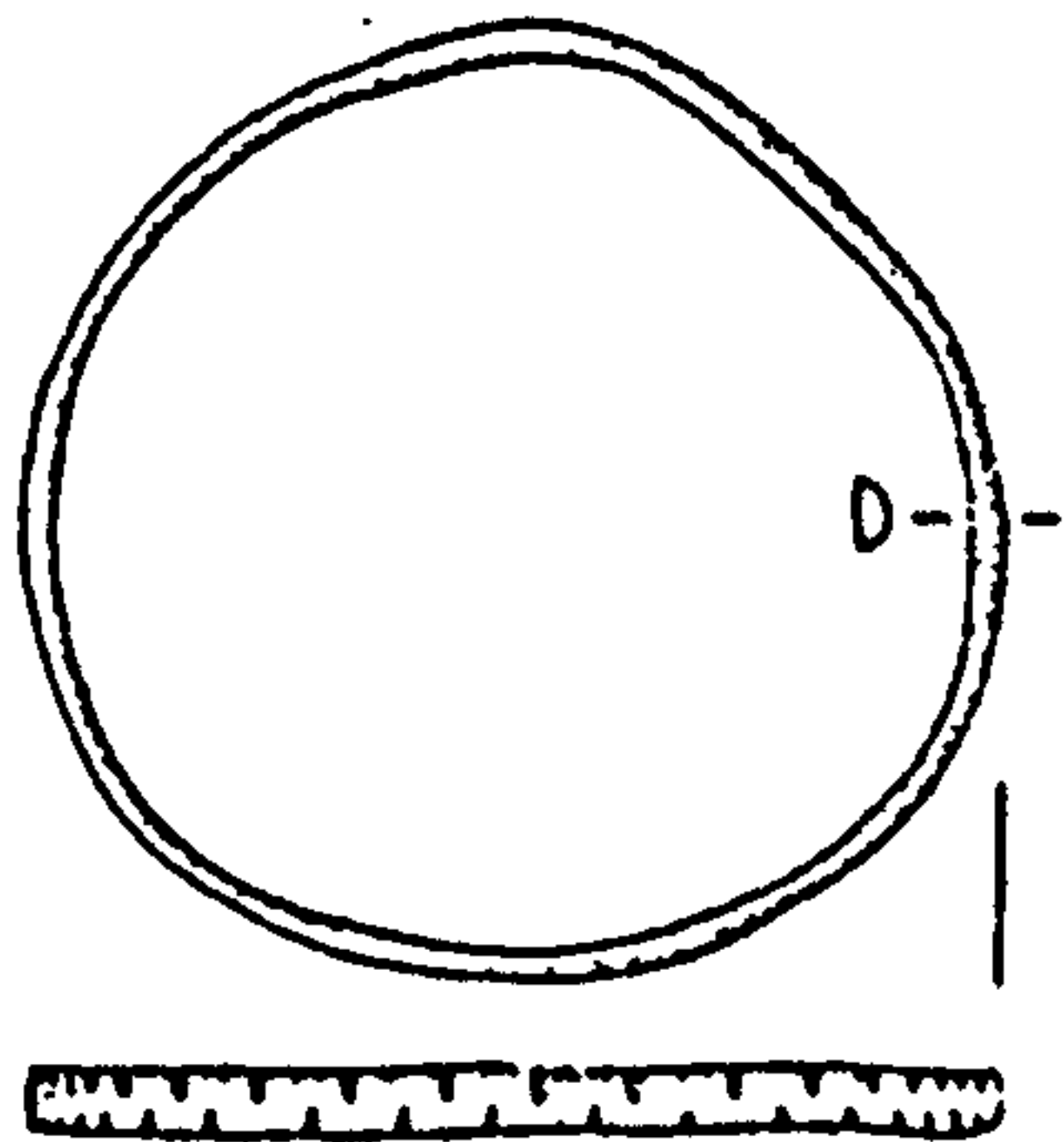
Augst  
Riha 1990 cat.no.538

a2 decoration



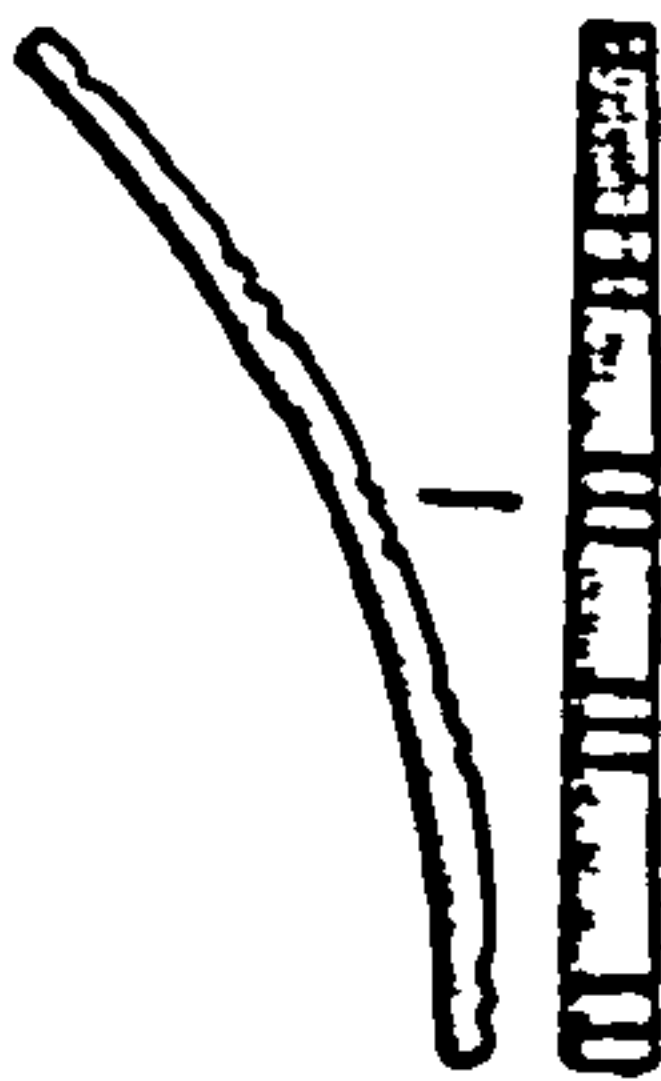
Uley  
Woodward & Leach 1993  
fig.128 19

a1 decoration



Pfaffenhoffen  
Keller 1971 taf.18 9

a14 decoration



Shakenoak  
Brodrigg 1973 no.192

at varying scales



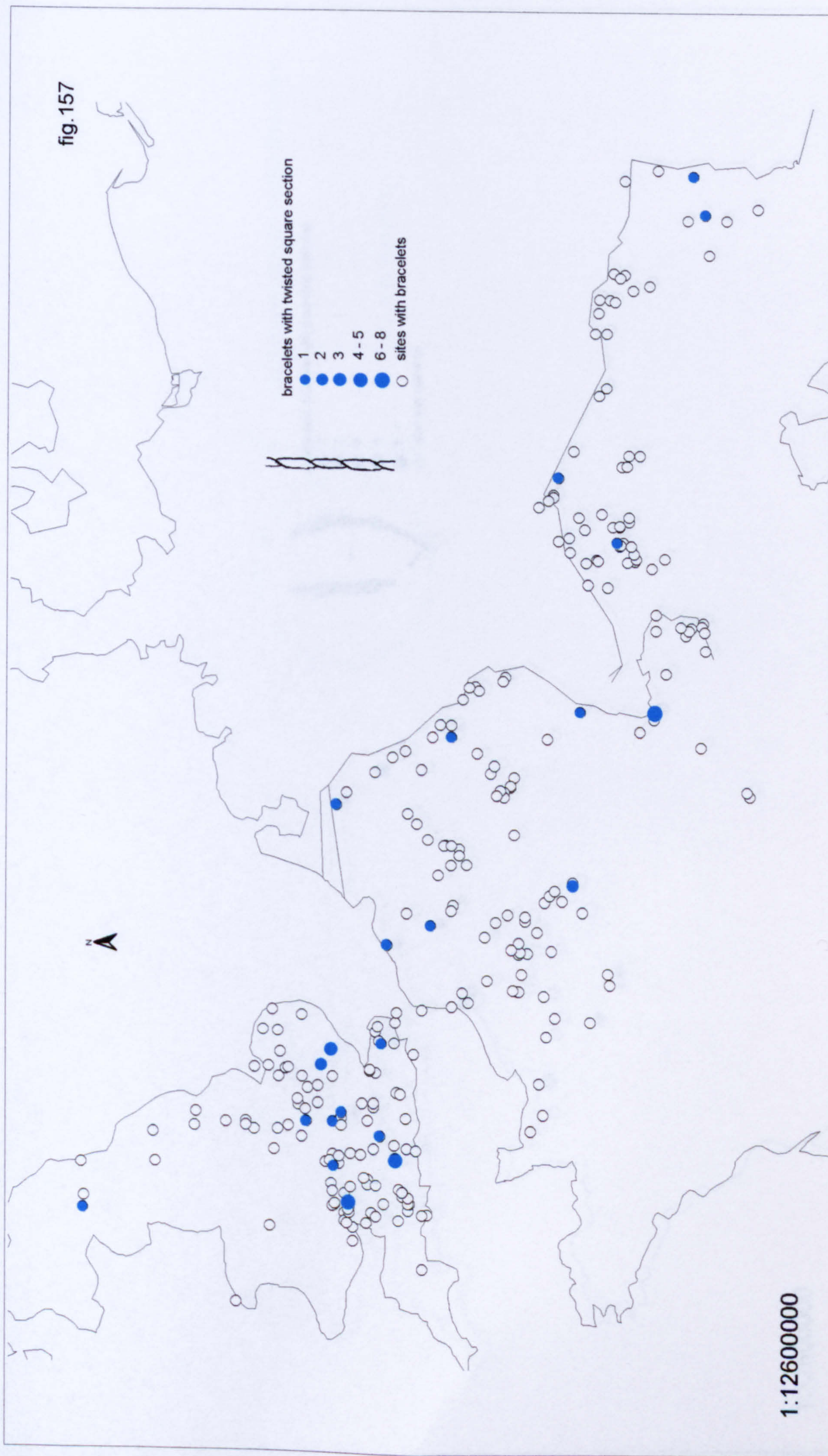


fig.157

1:12600000



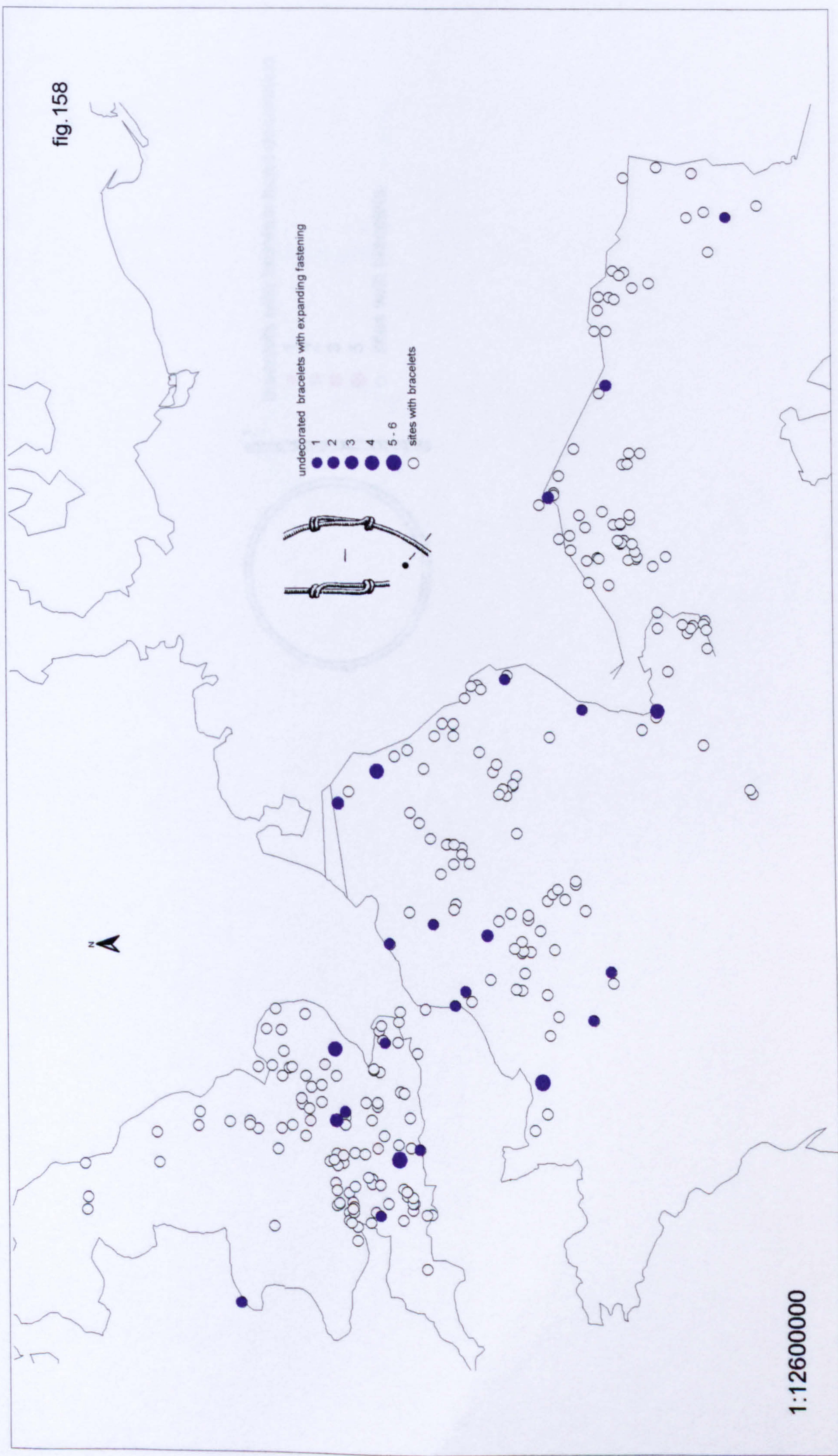


fig.158









fig. 160



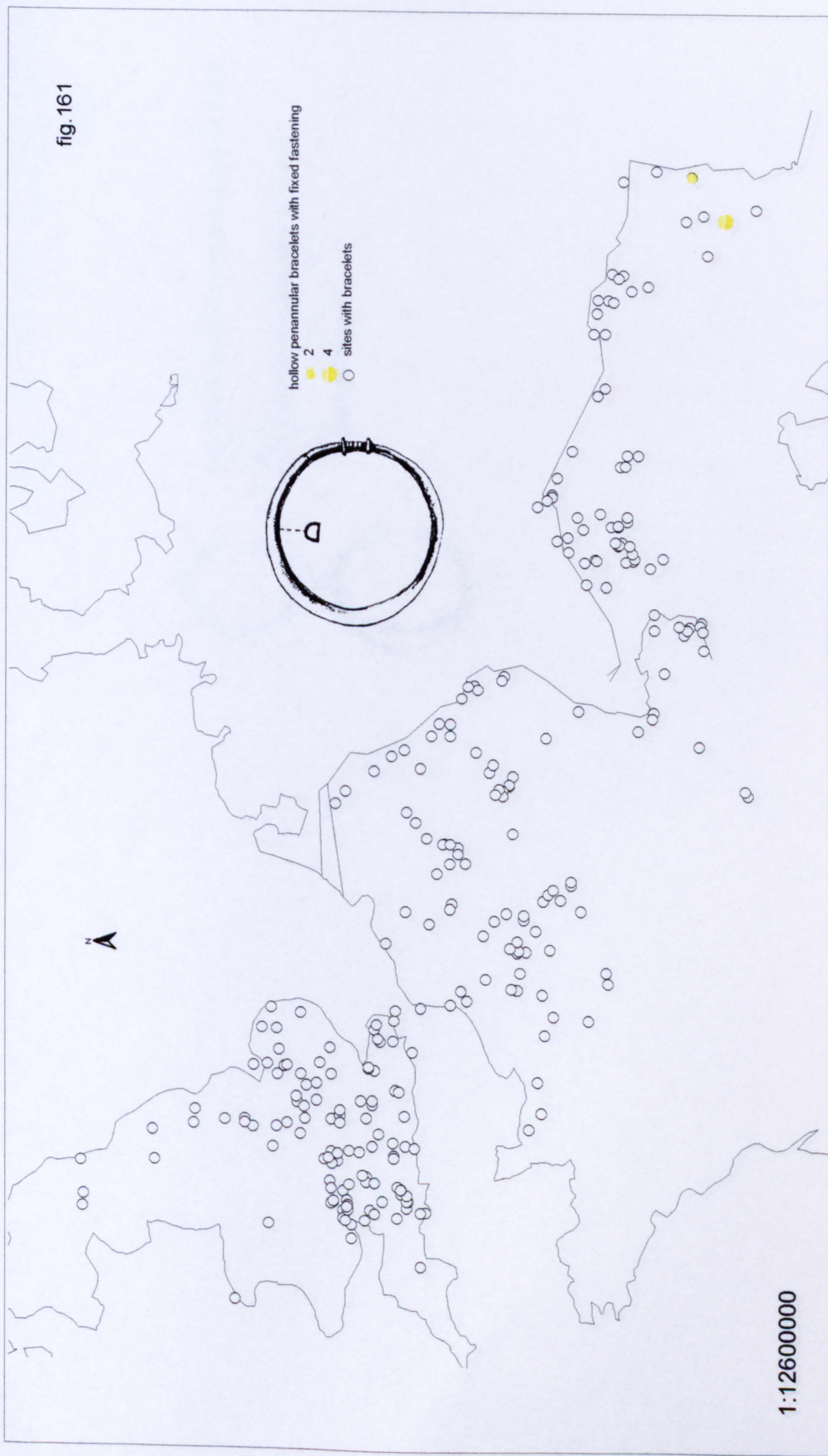


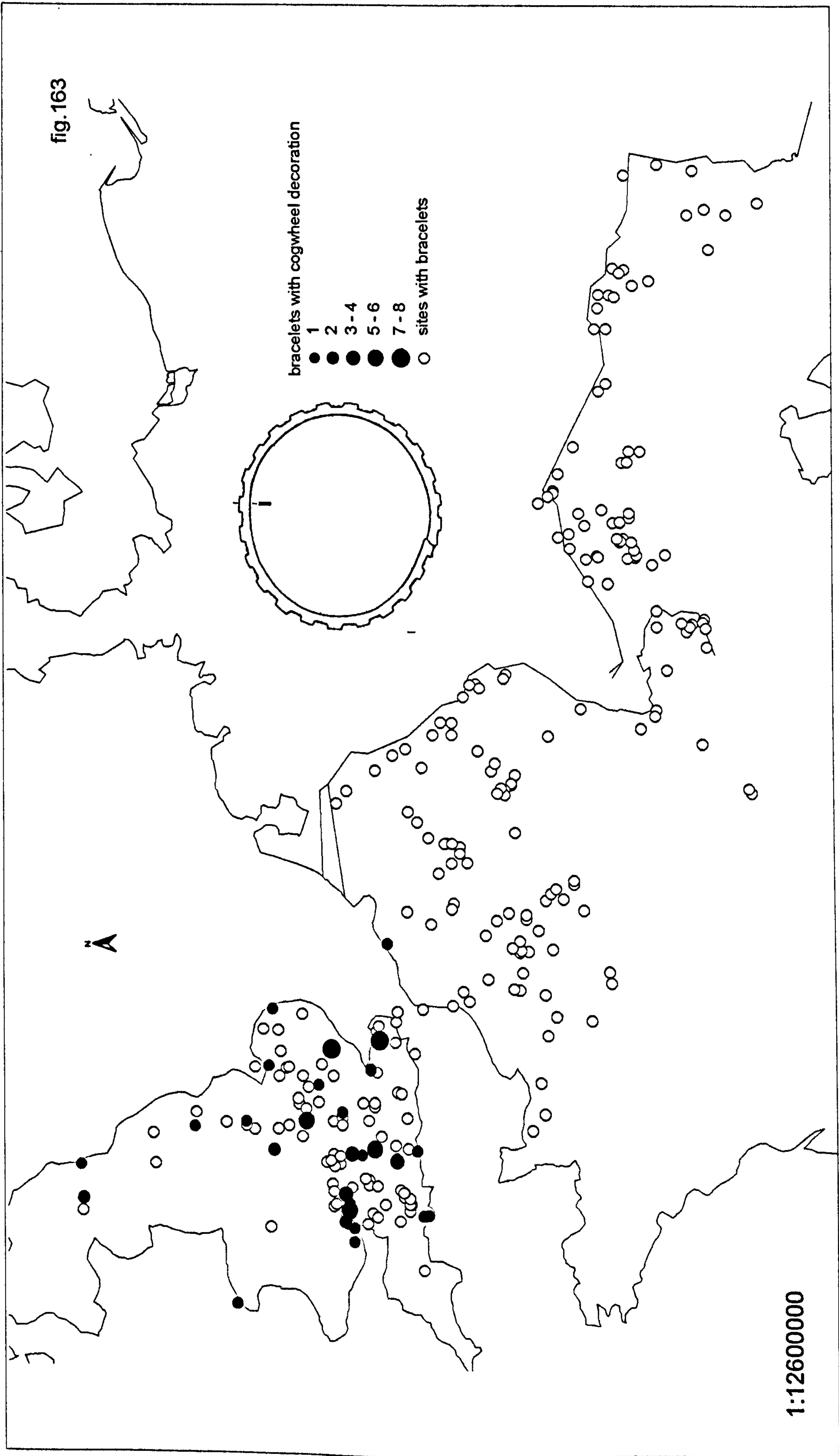
fig. 161

1:12600000











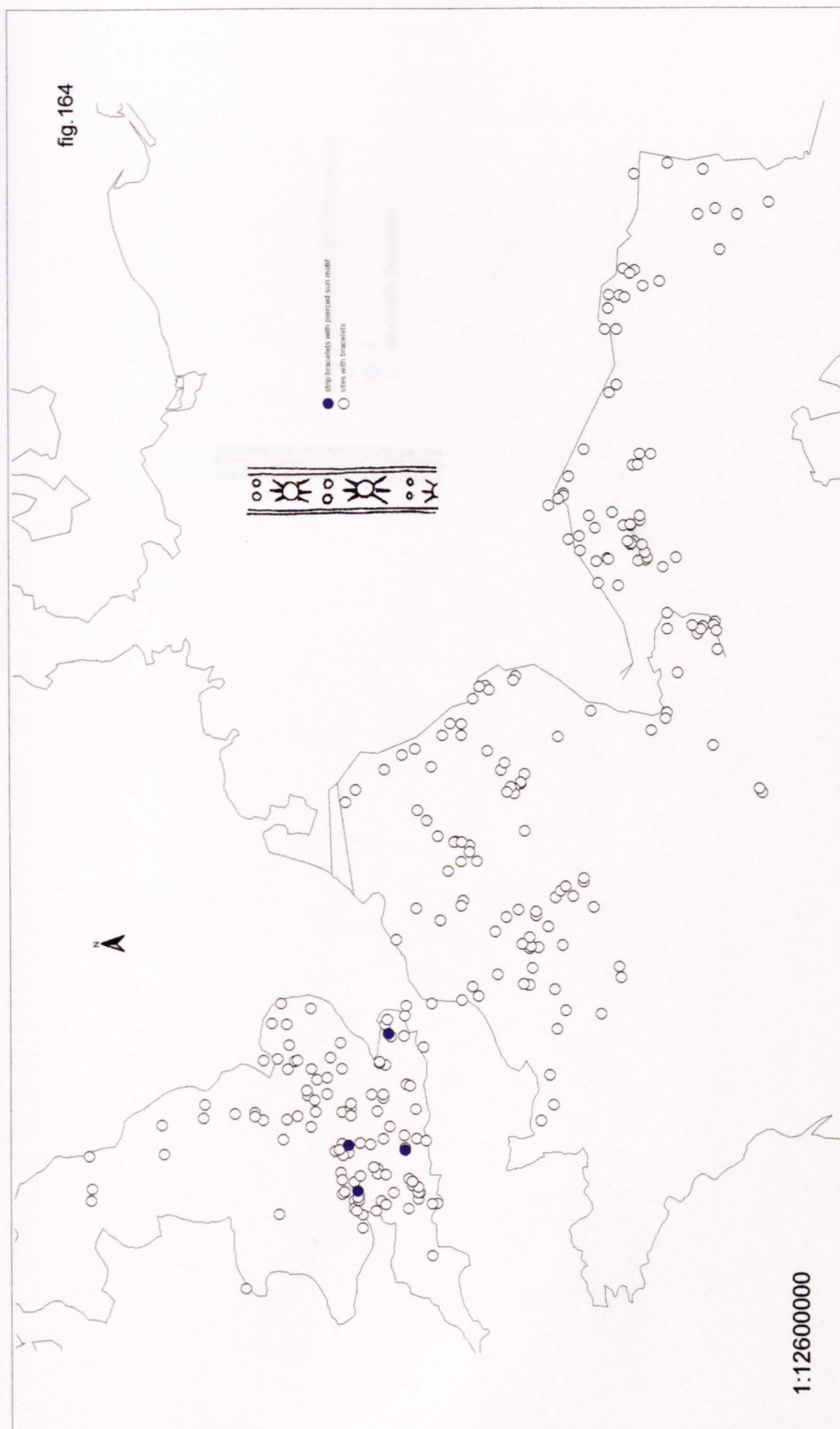


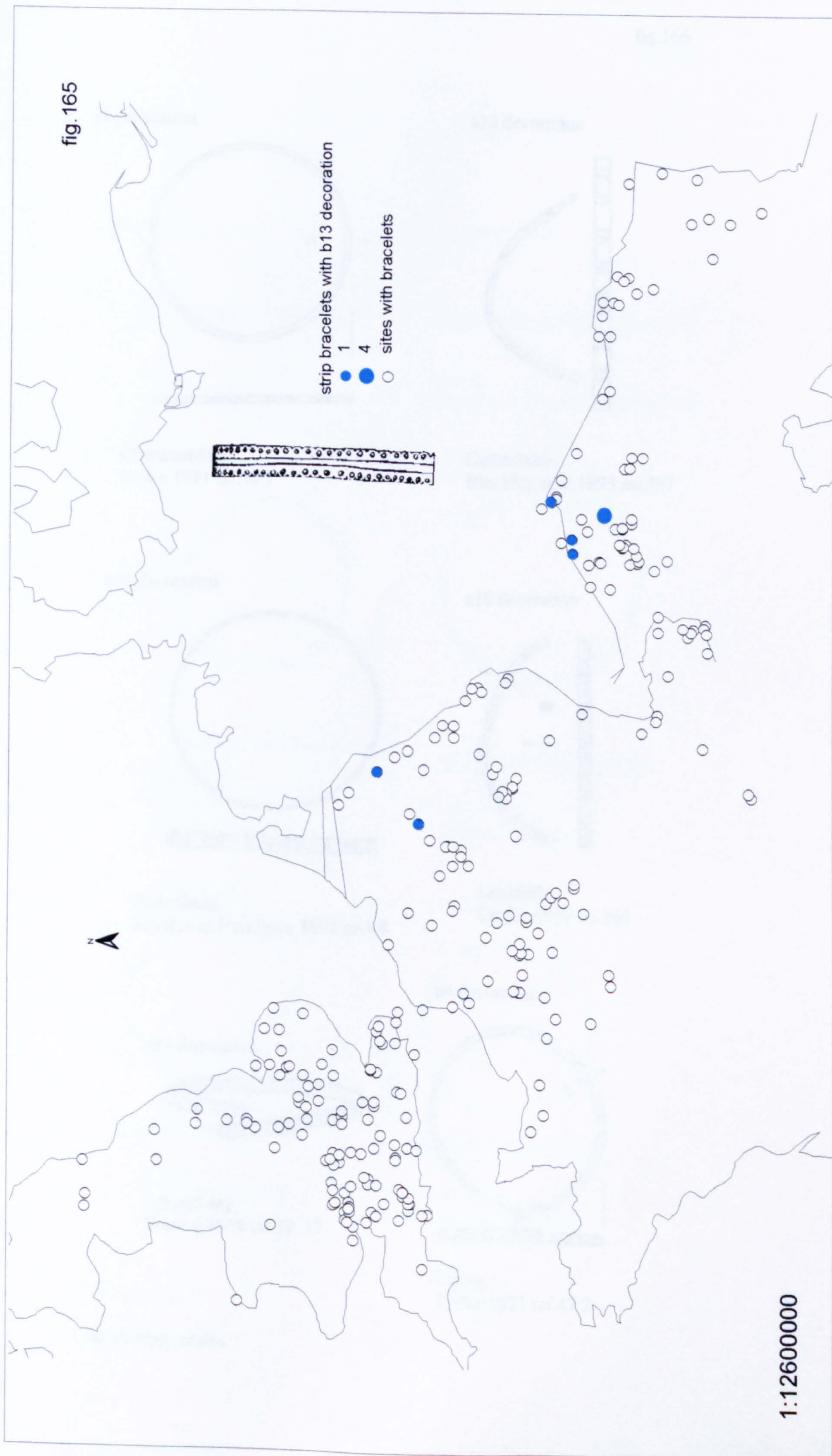
fig. 164

strip bracelets with pierced sun motif  
sites with bracelets



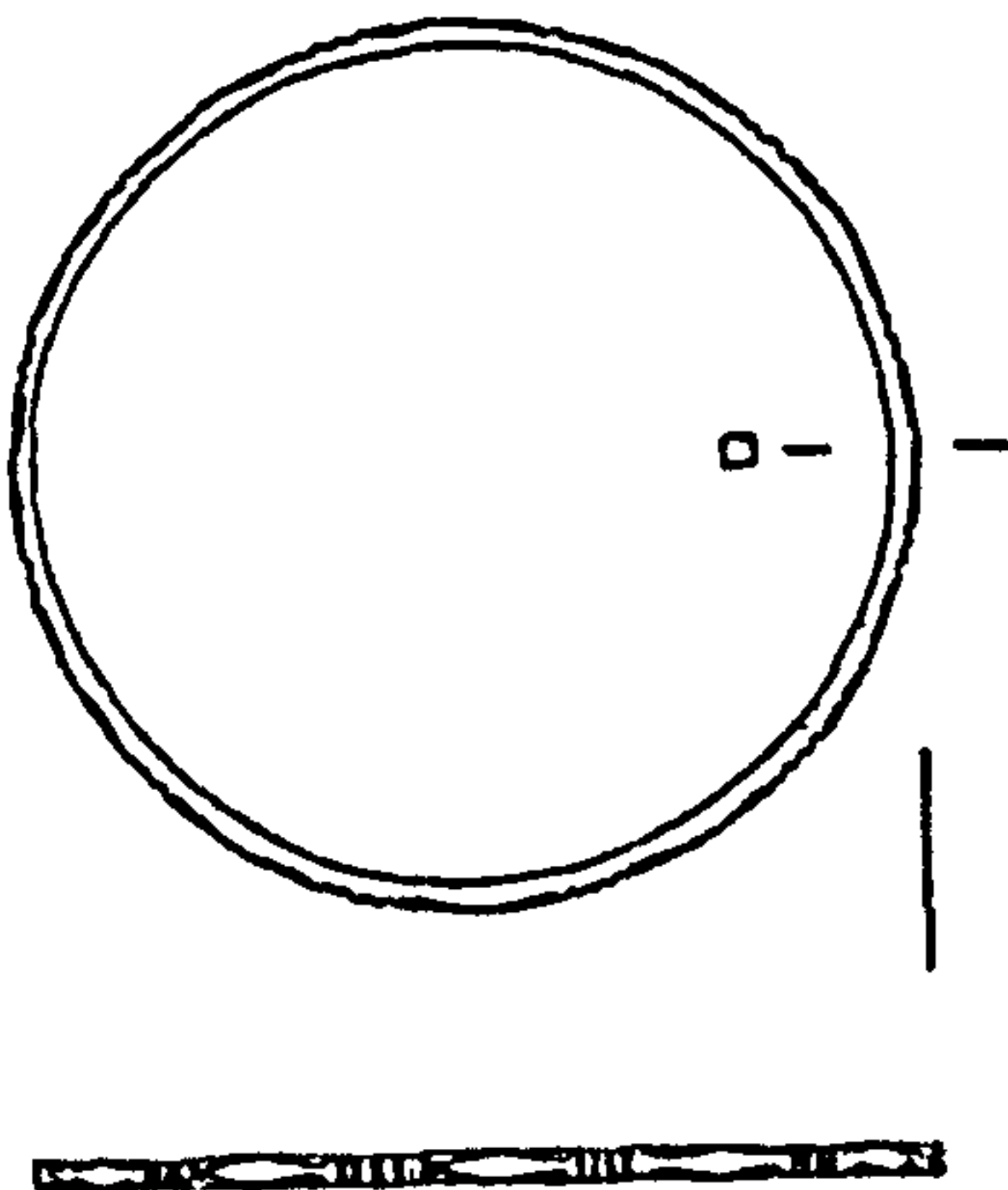
1:12600000





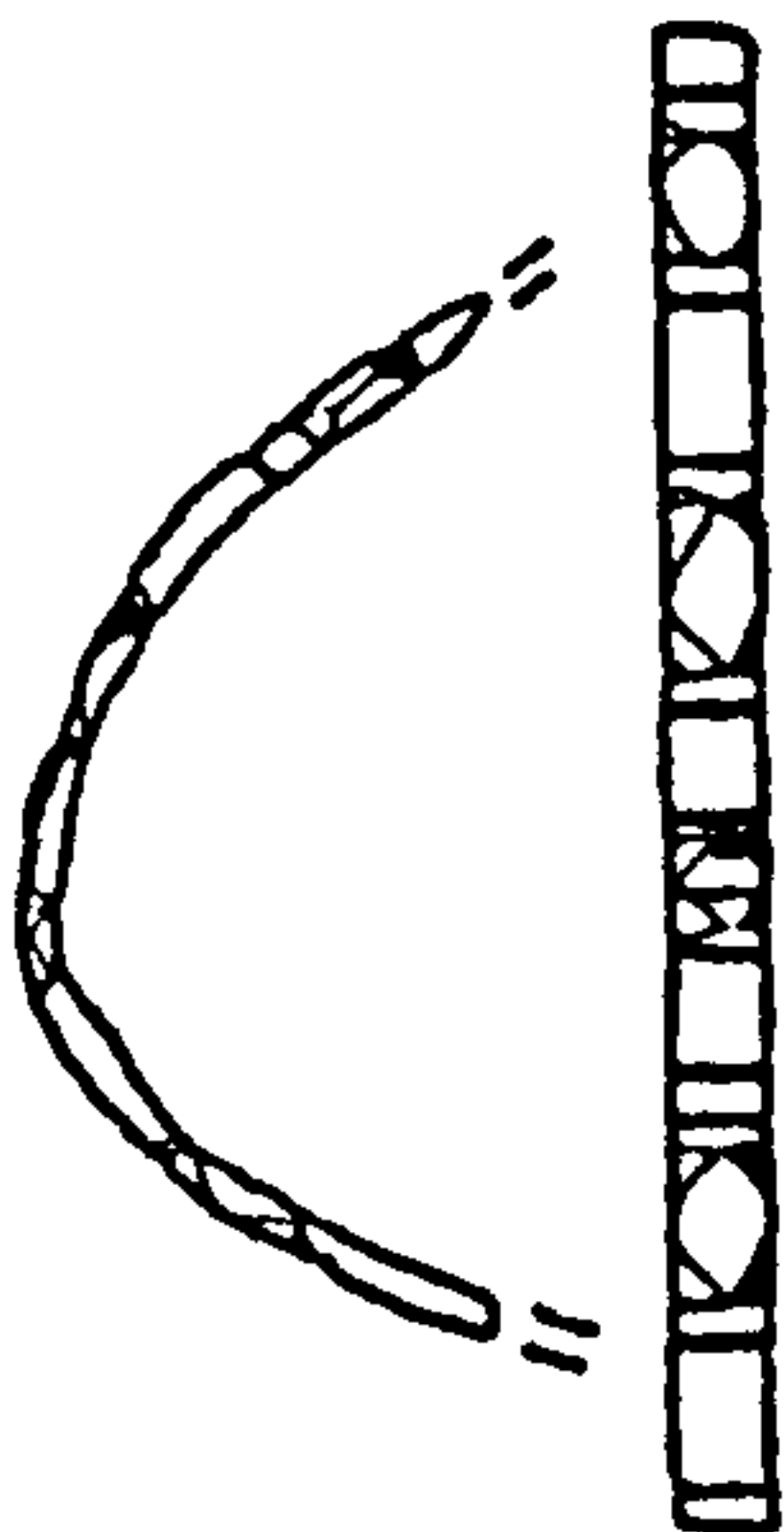


a8 decoration



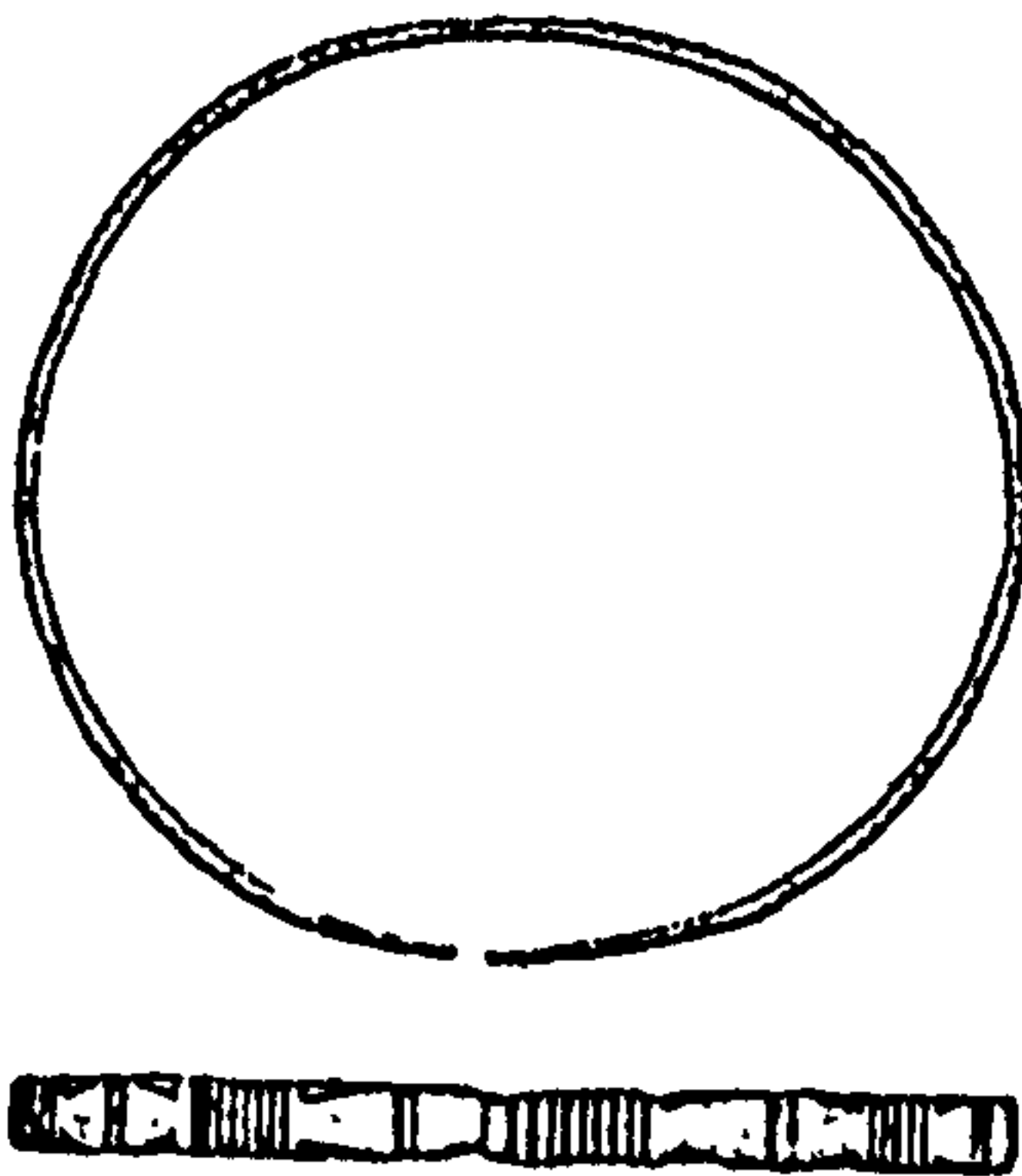
Obertraubling  
Keller 1971 taf.49 7

a12 decoration



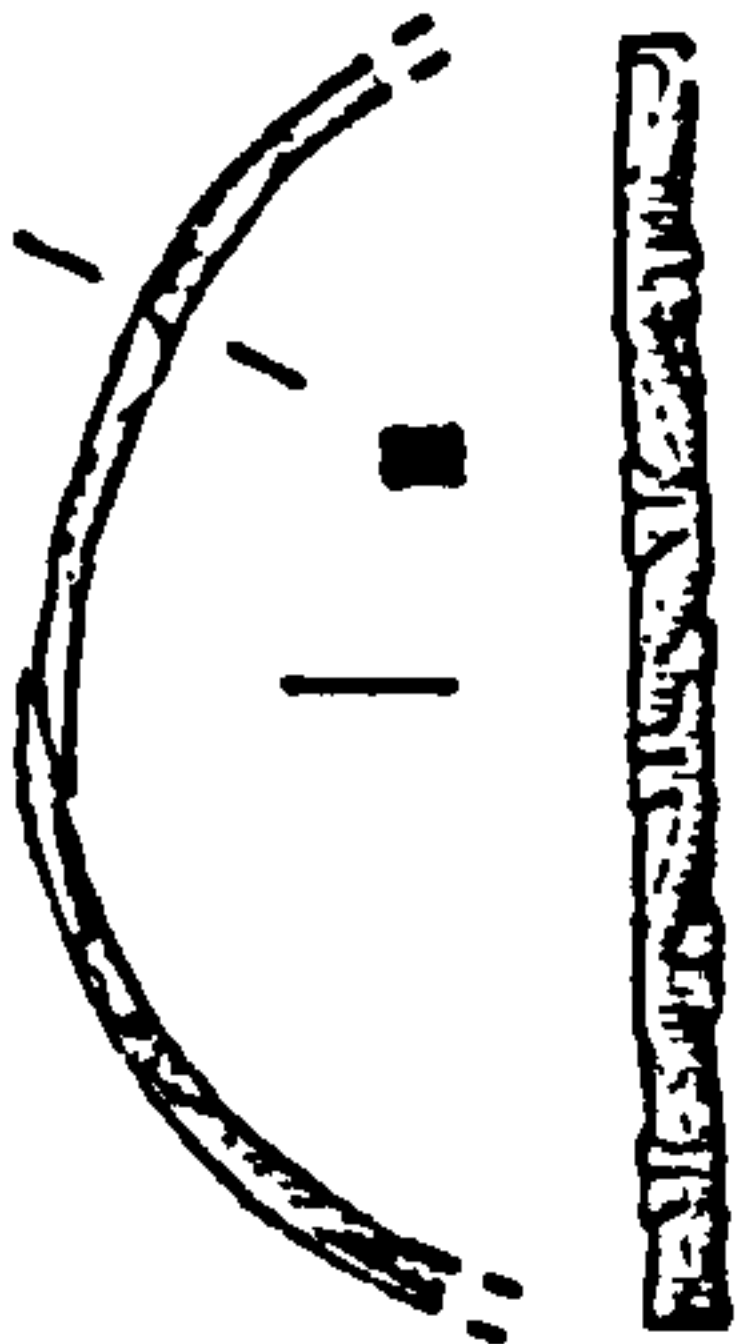
Canterbury  
Blockley et al 1993 no.367

a19 decoration



Oudenburg  
Mertens & Van Impe 1971 gr.4 8

a10 decoration



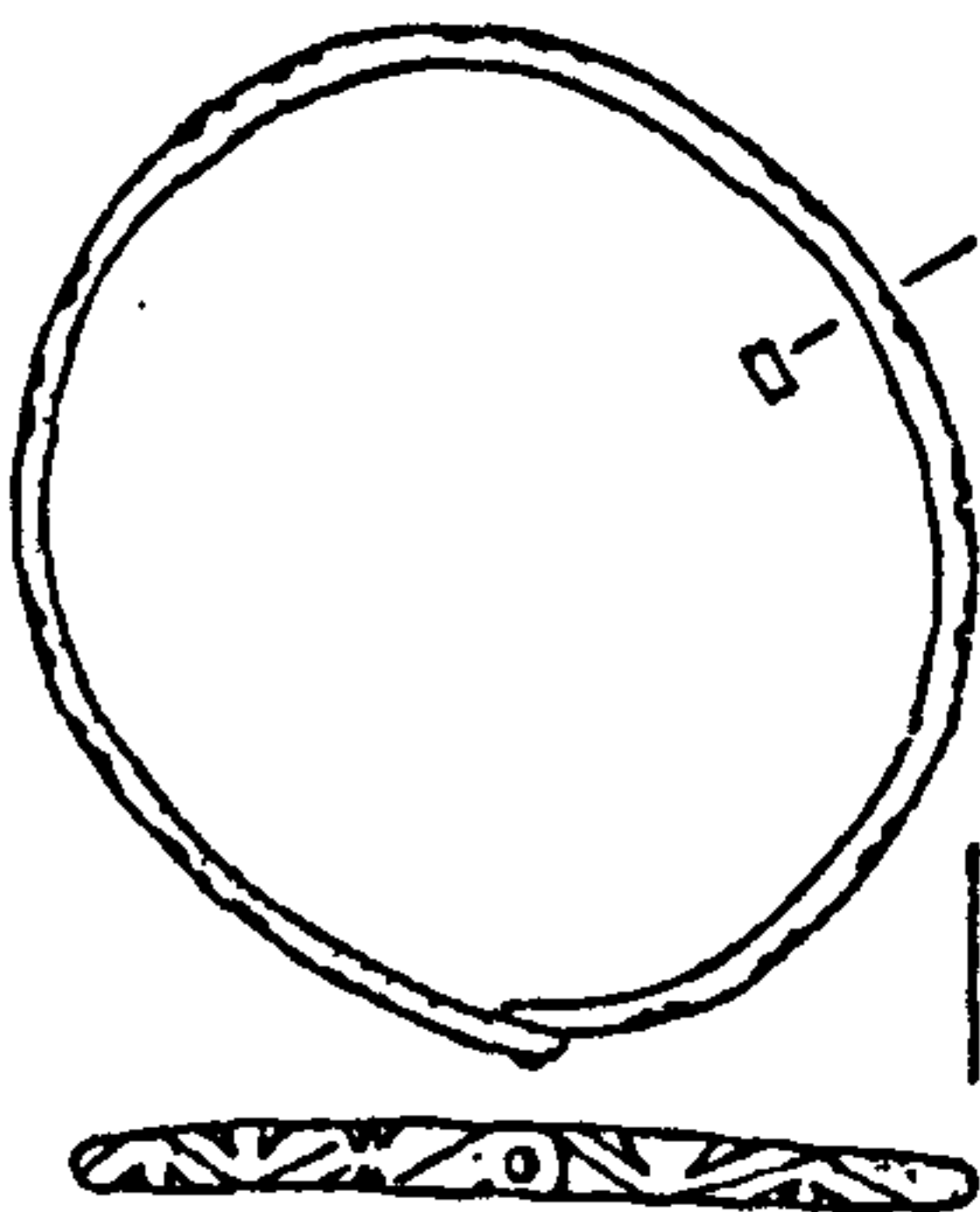
Lankhills  
Clarke 1979 no.265

a25 decoration



Lorenzberg  
Werner 1969 taf.39 17

a4 decoration



Eining  
Keller 1971 taf.47 2

at varying scales



Alternate long facets

a34 decoration

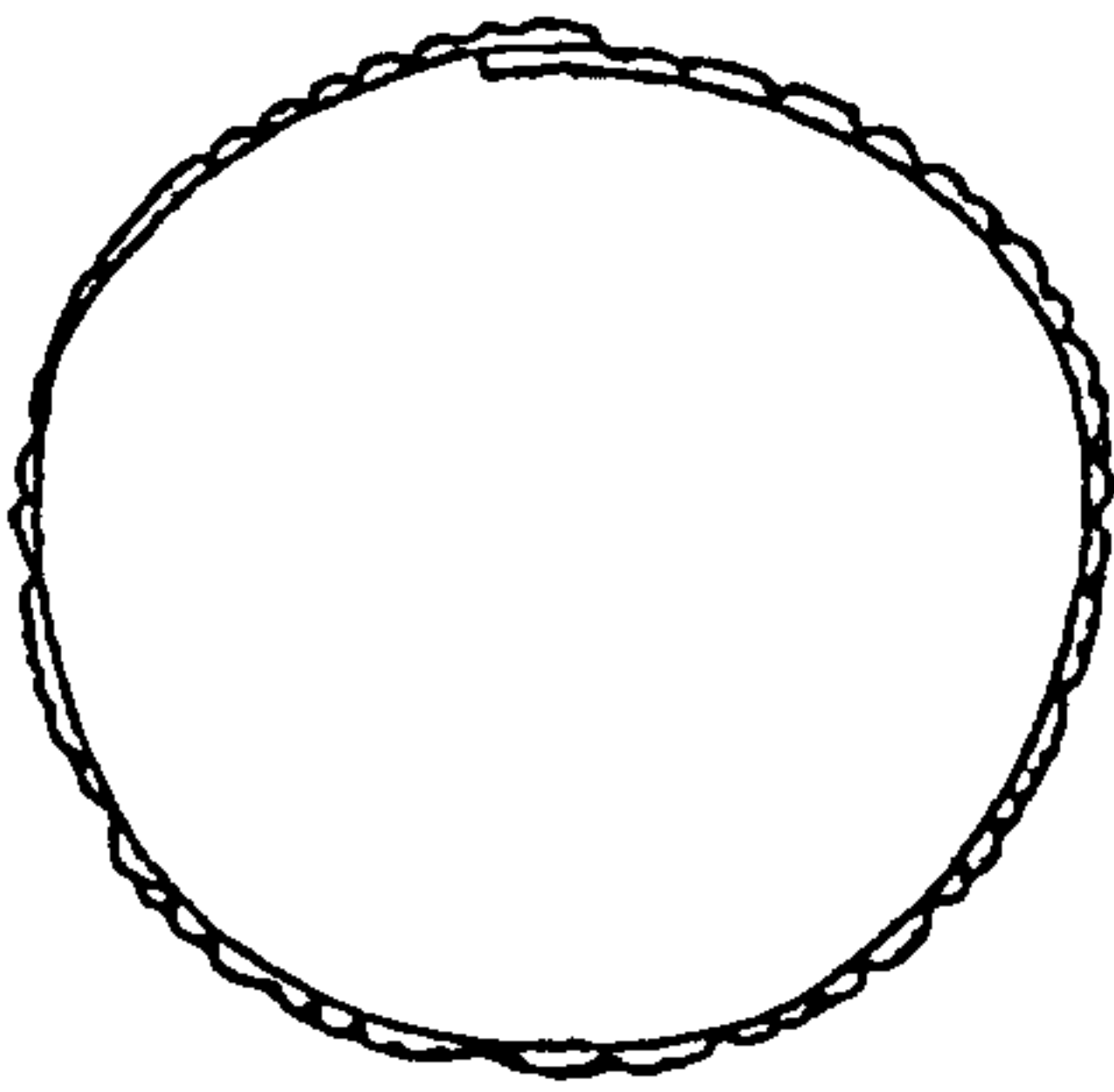
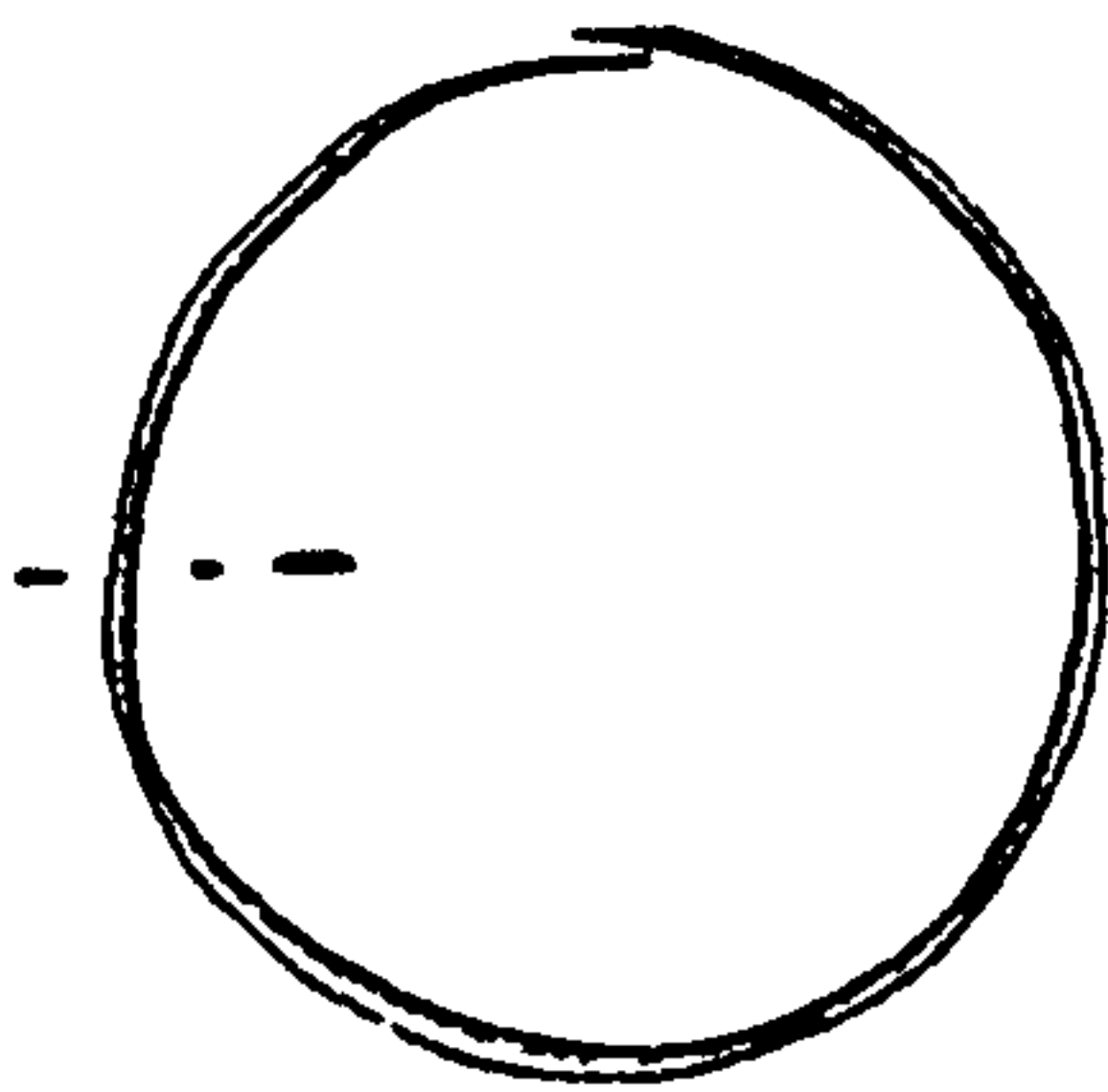


Lydney  
Wheeler & Wheeler 1932 fig.17 R

Lydney  
Wheeler & Wheeler 1932 fig.17 Q

a39 decoration

e2 decoration

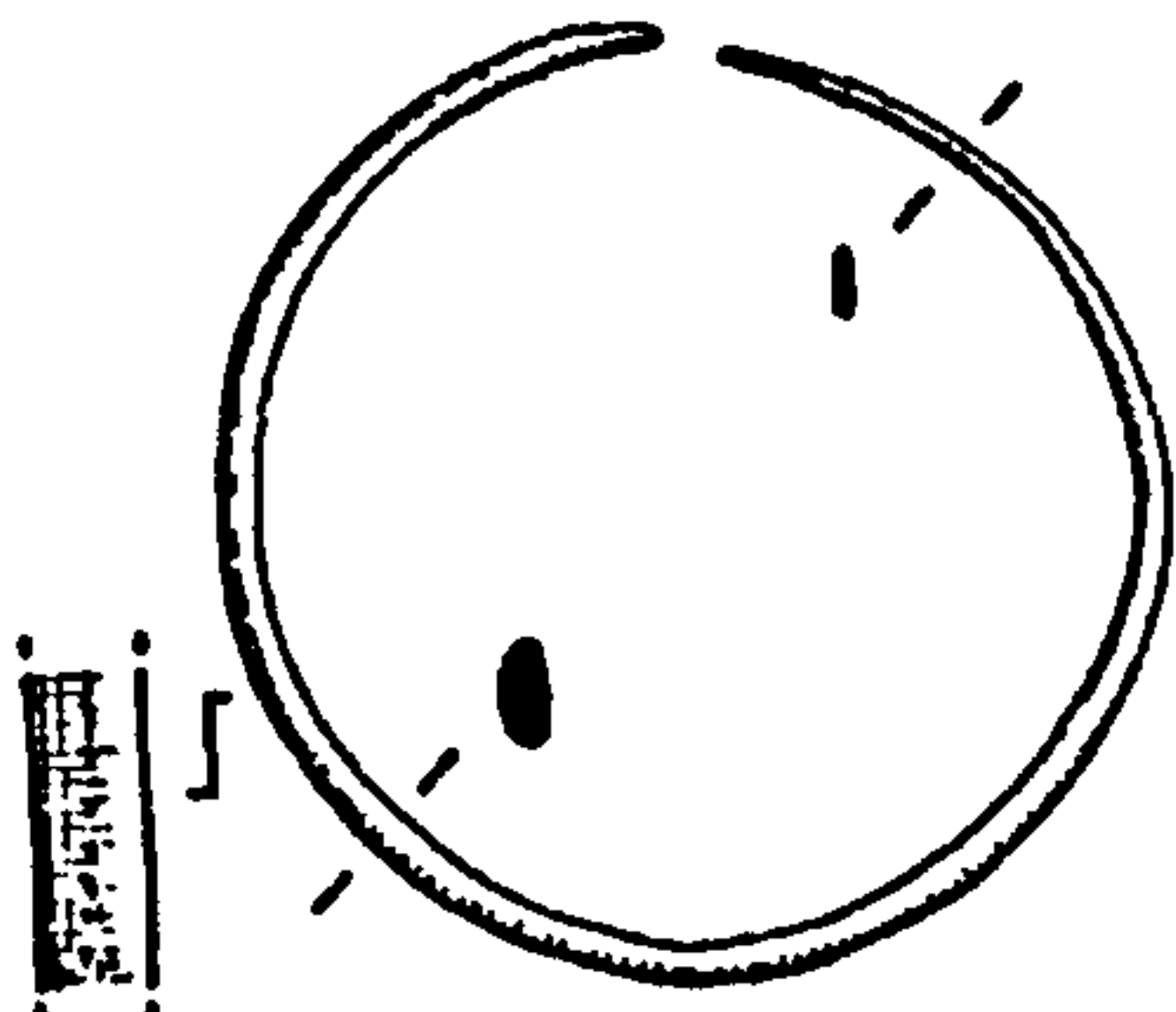
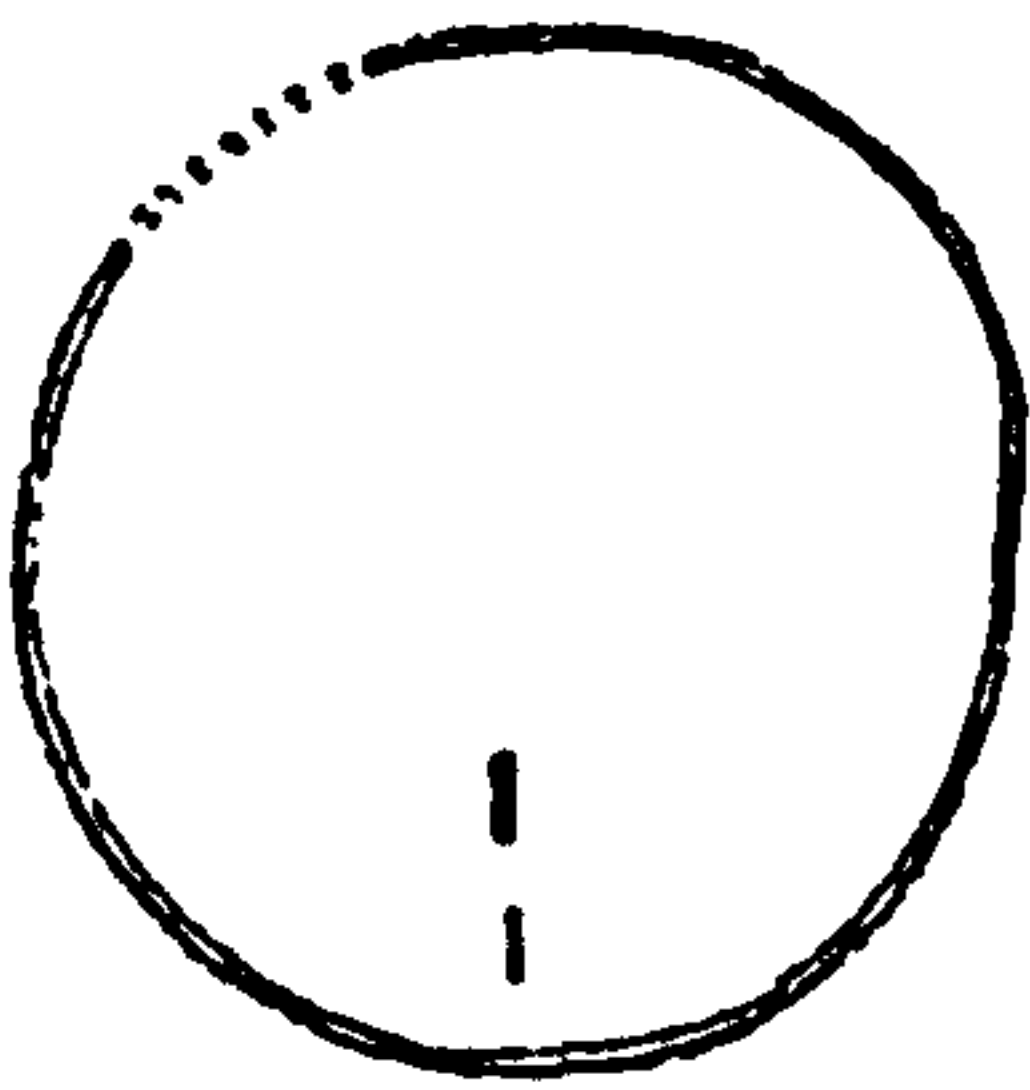


Regensburg  
Von Schnurbein 1977  
taf.144 gr.1115 2

Azlburg  
Menghin 1990 gr.11

g2 decoration

f1 decoration



Rochester  
Cool 1981 fig.10 12

Lankhills  
Clarke 1979 SF.313

at varying scales



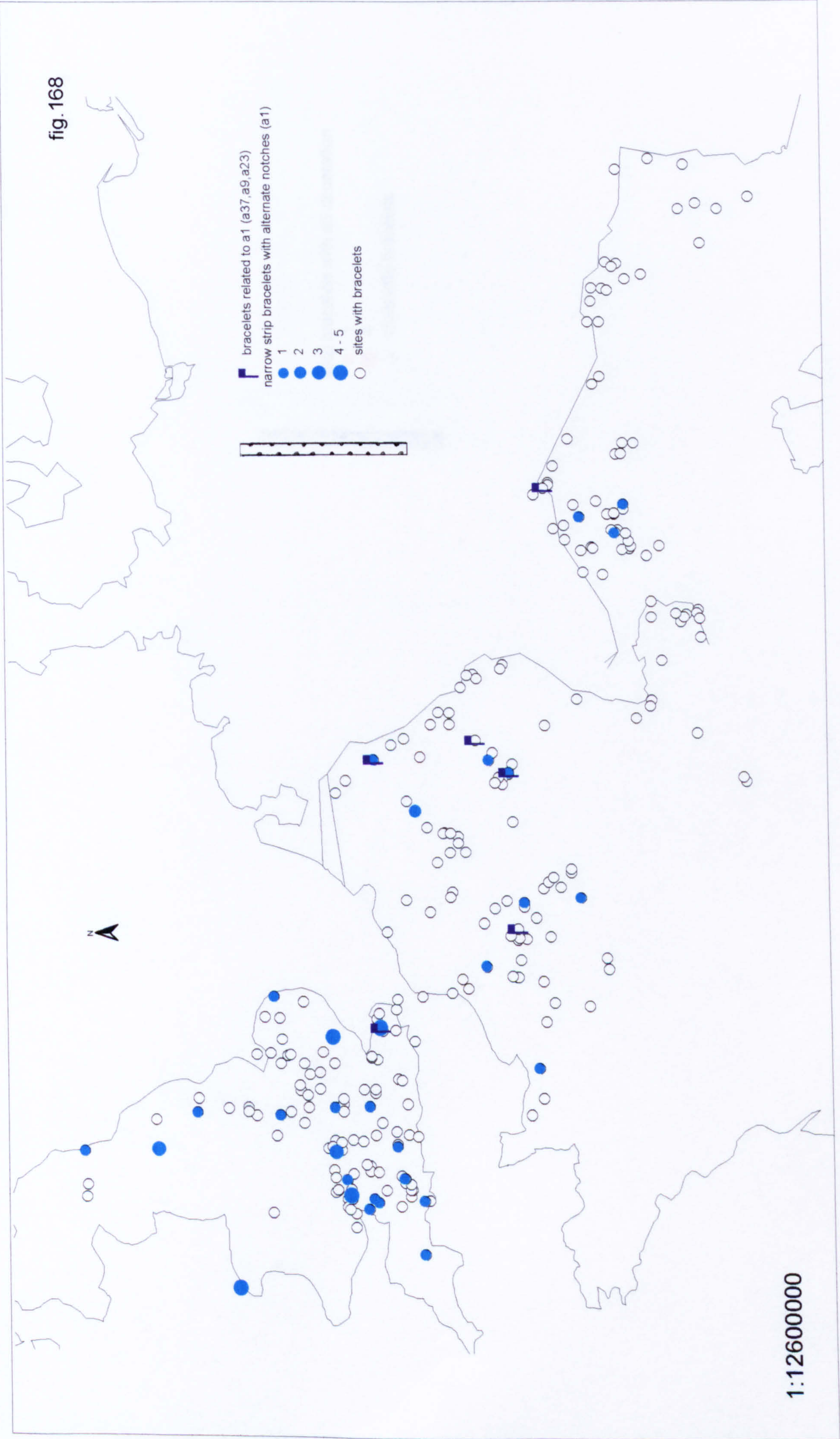
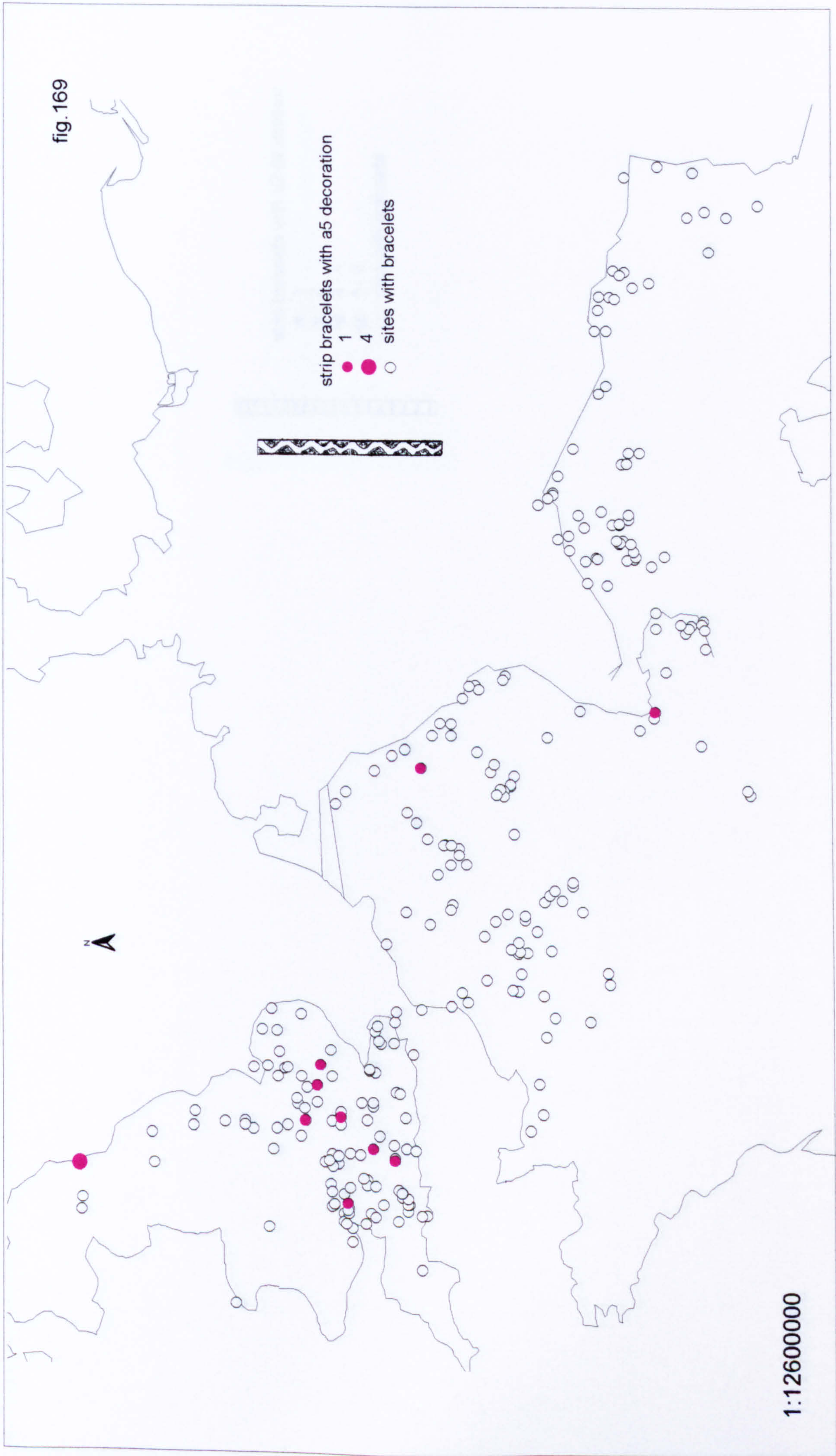


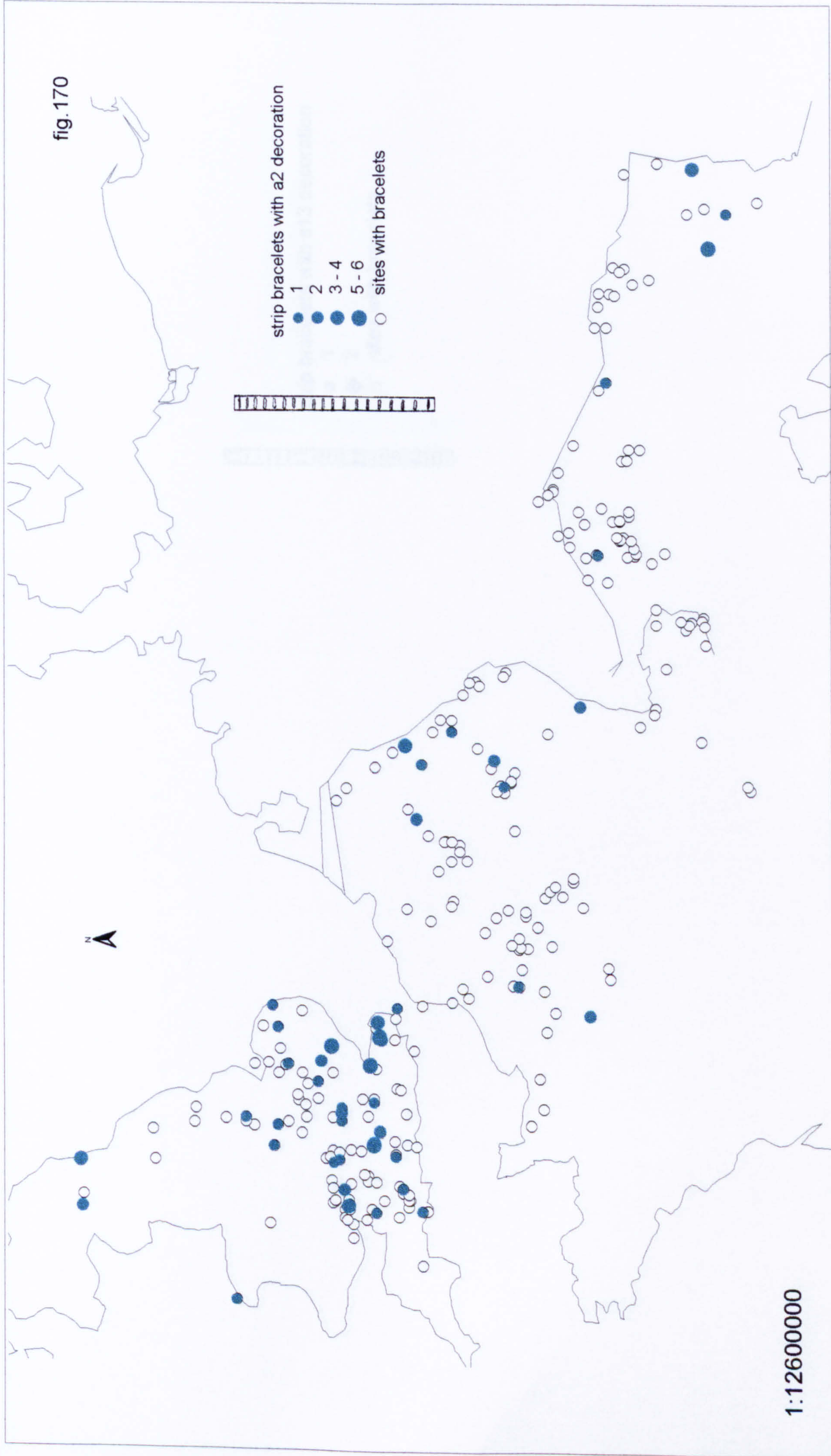
fig. 168

1:12600000

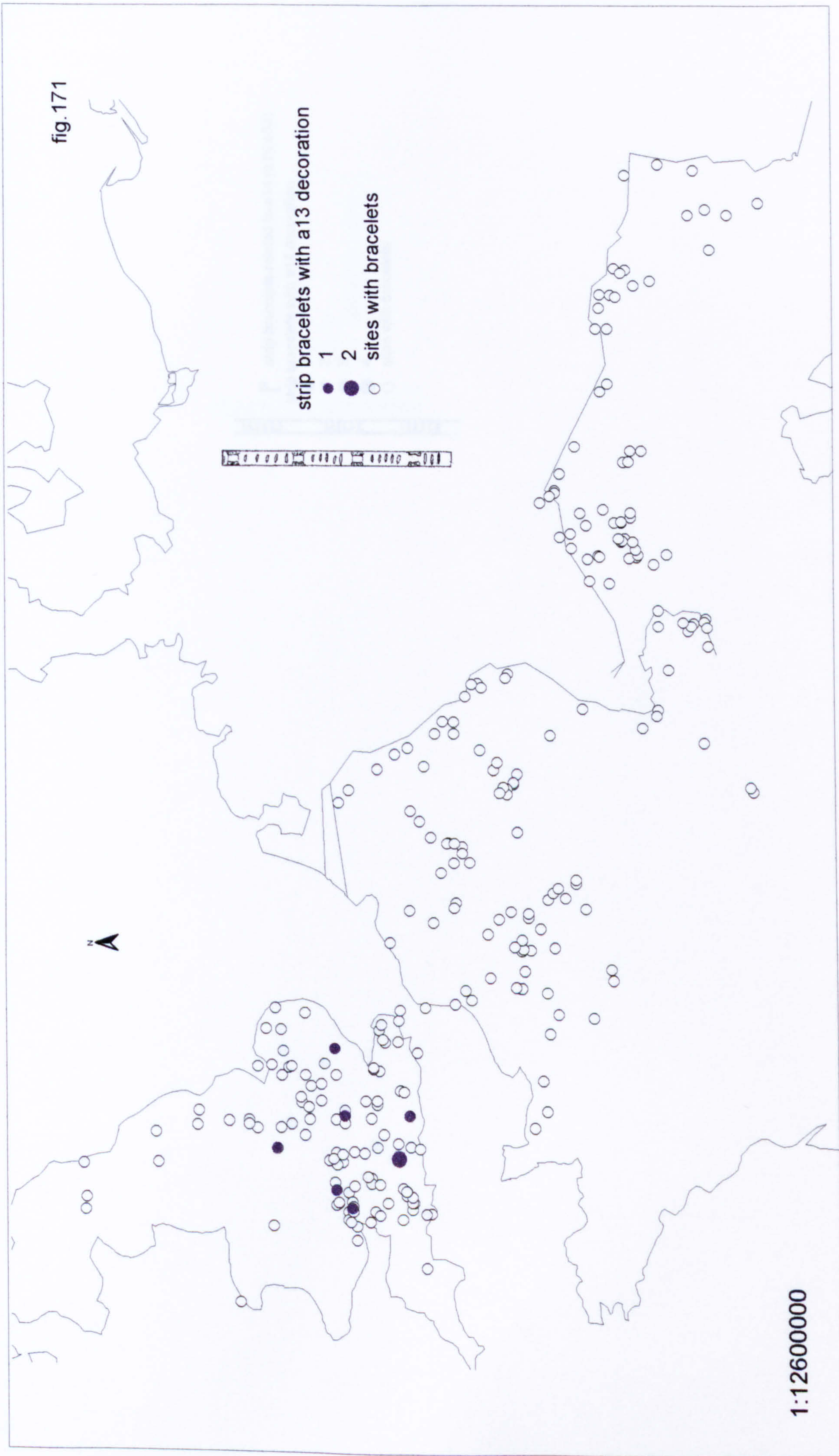














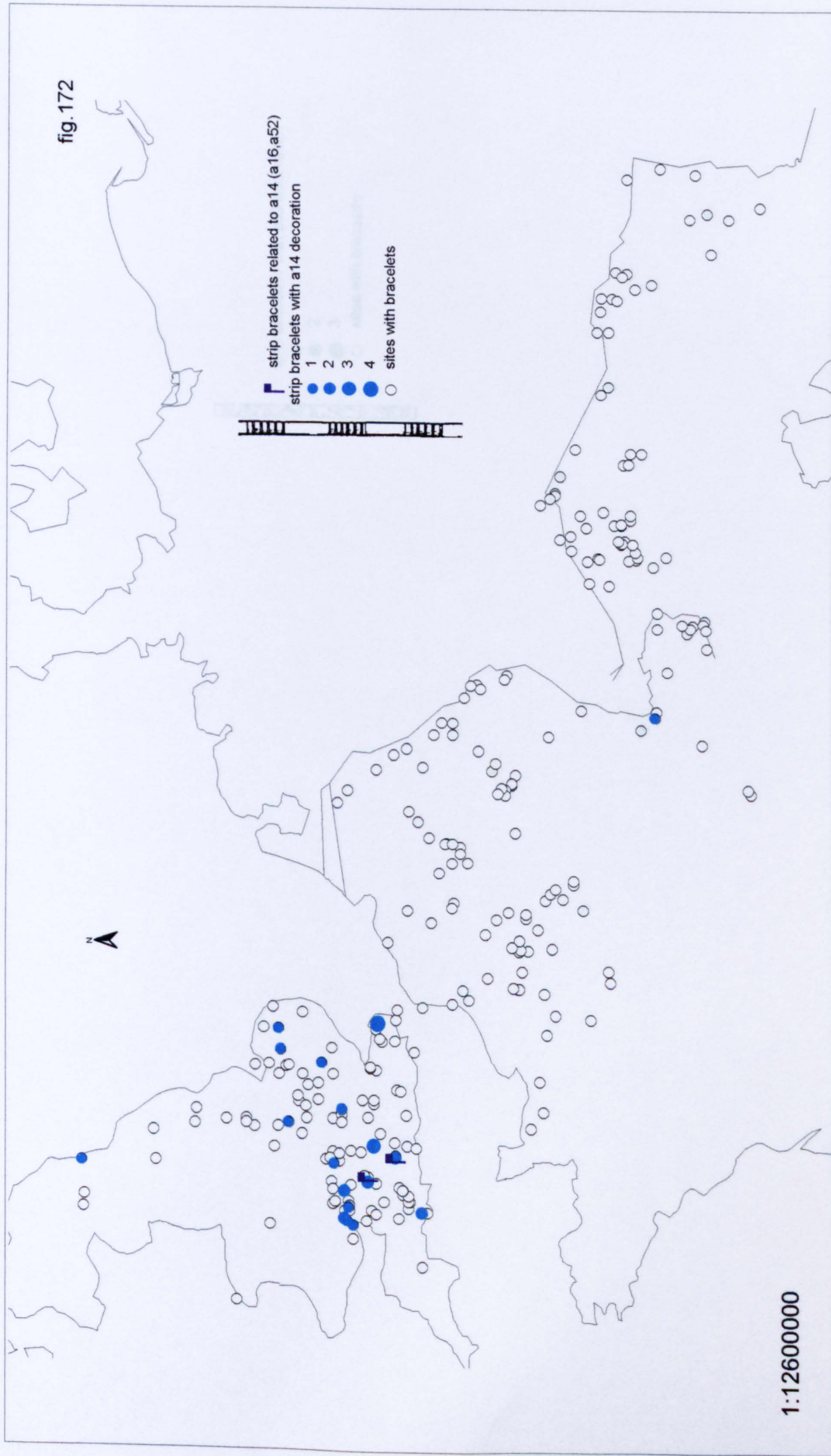


fig.172

1:12600000





fig.173

1:12600000



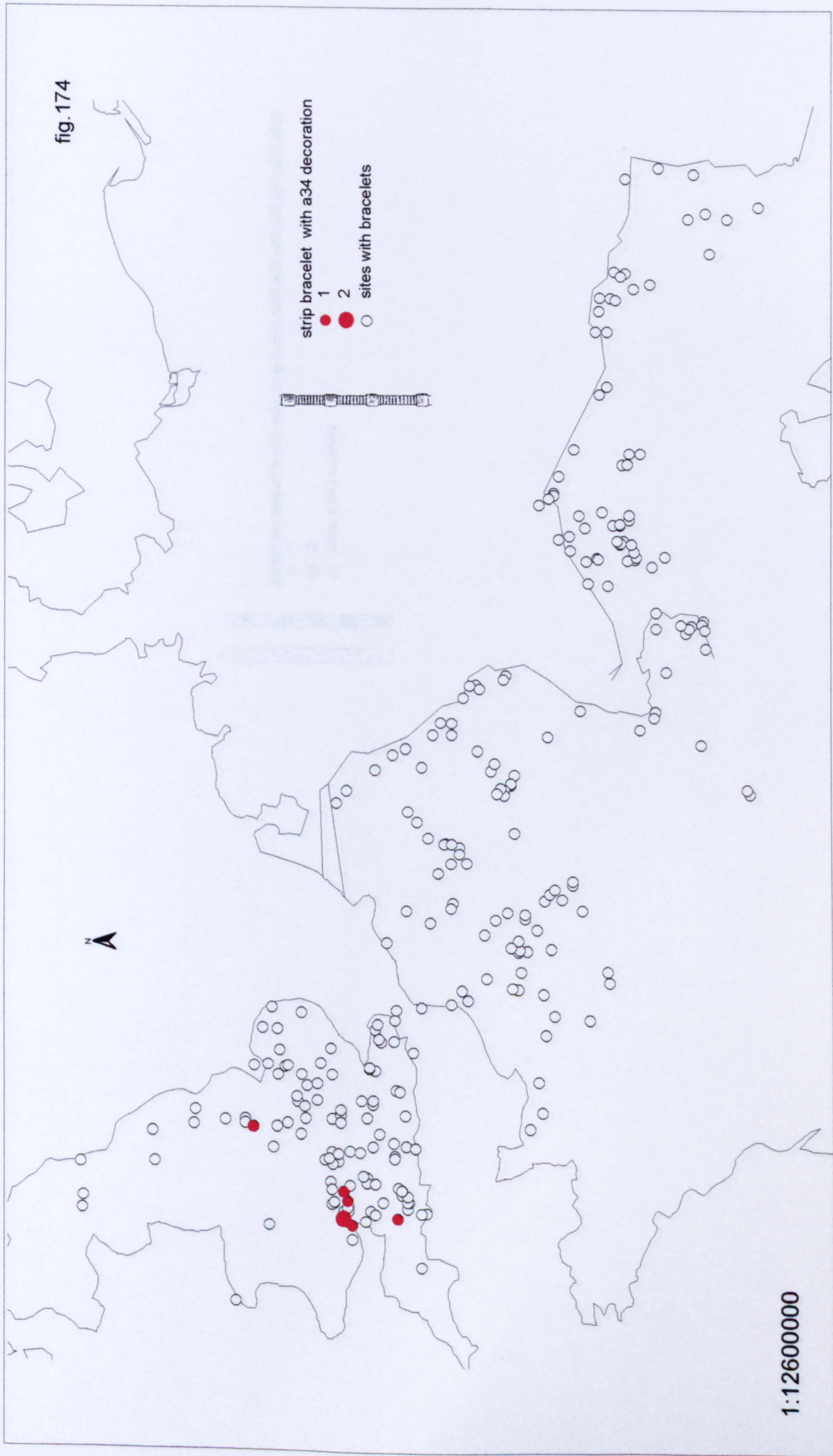


fig.174

1:12600000







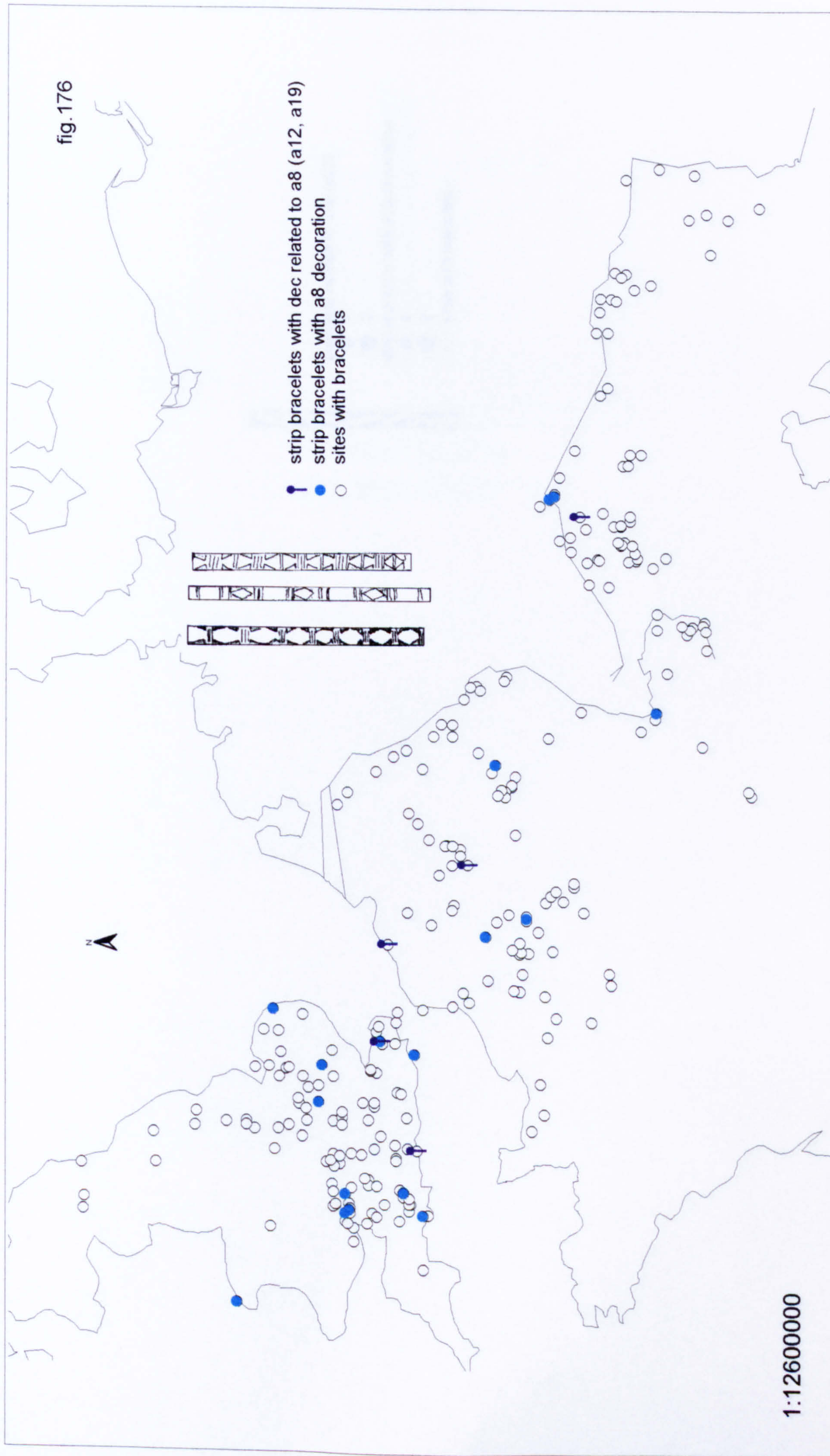


fig.176



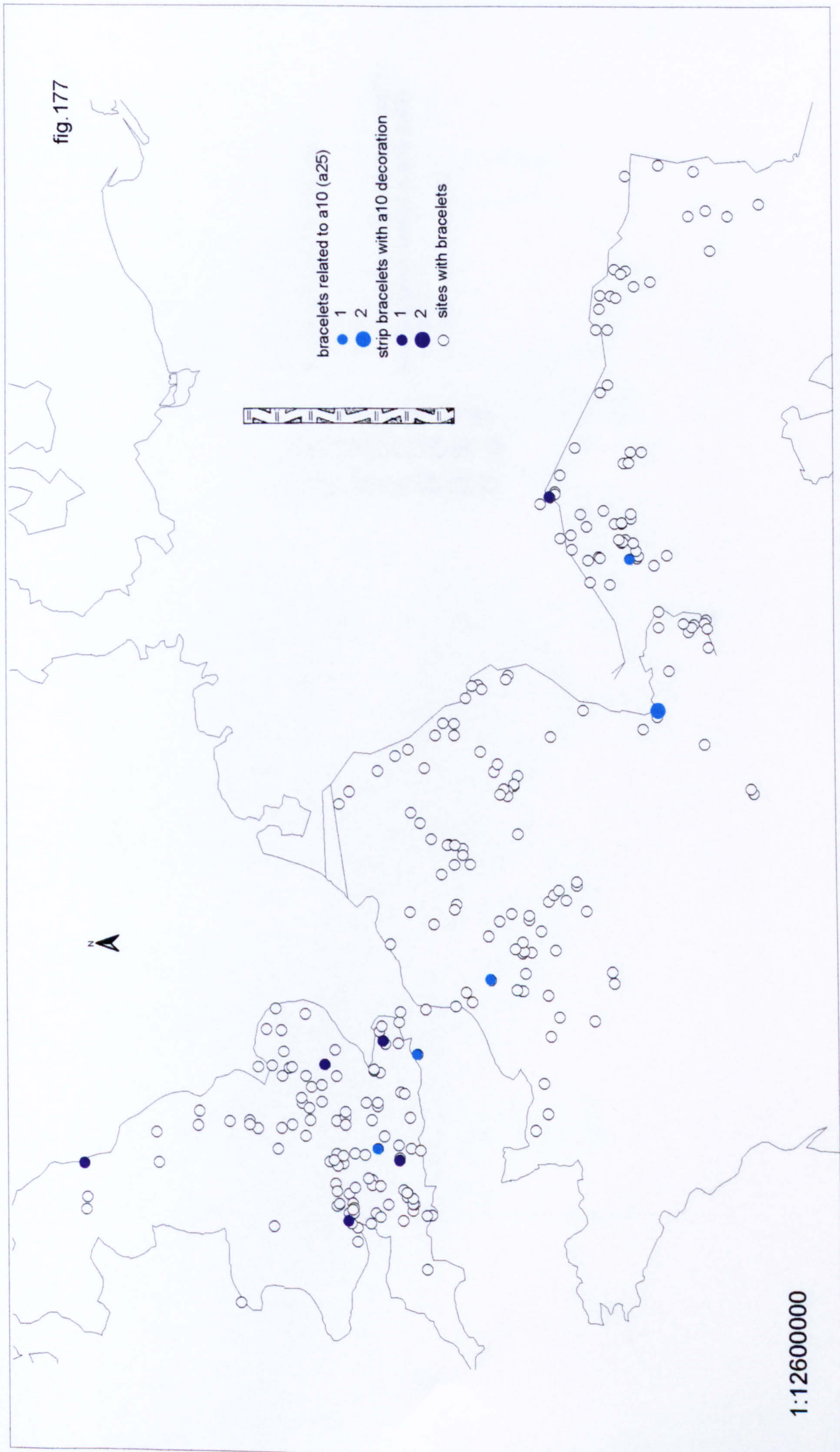
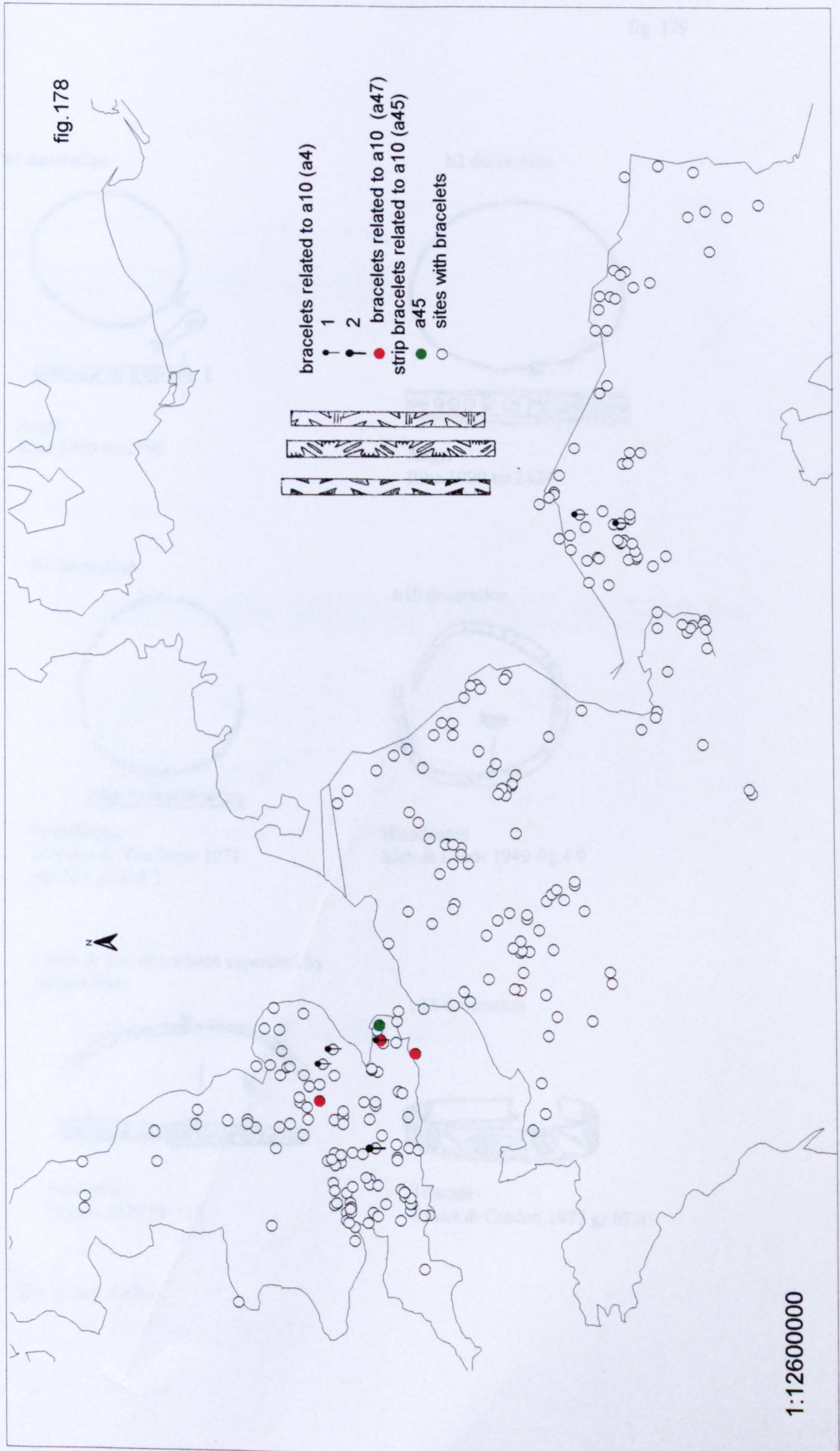


fig.177

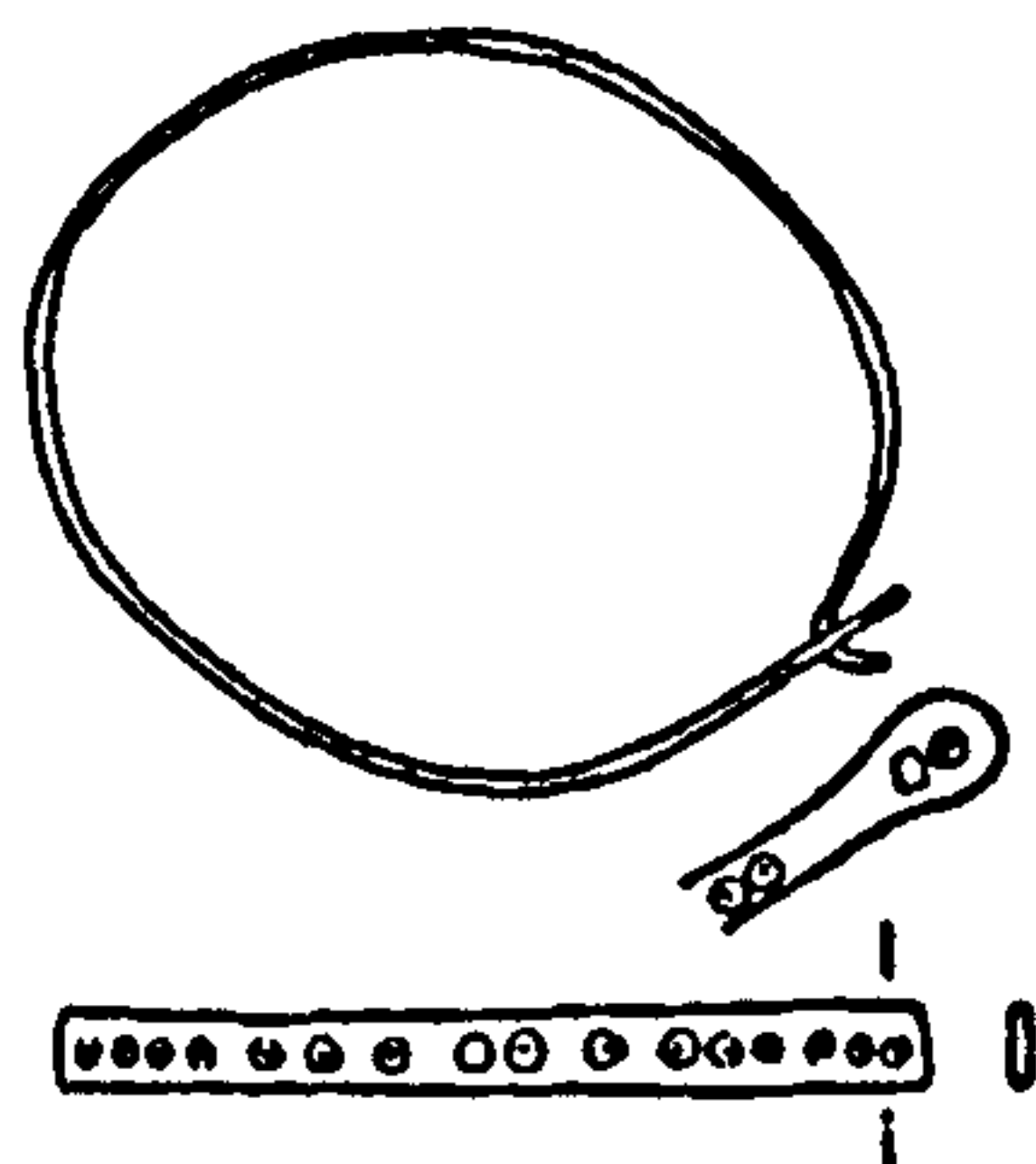
1:12600000





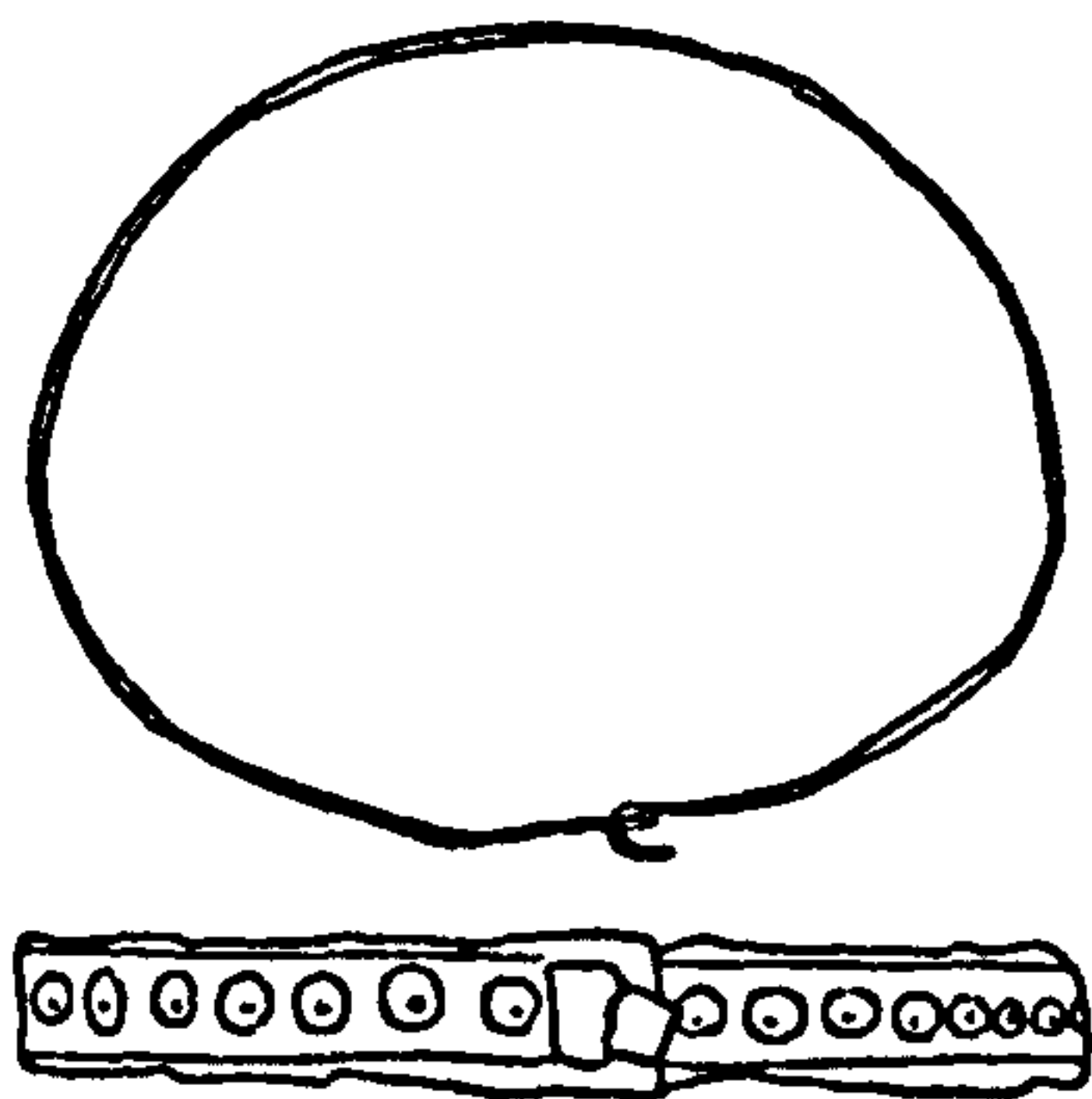


b1 decoration



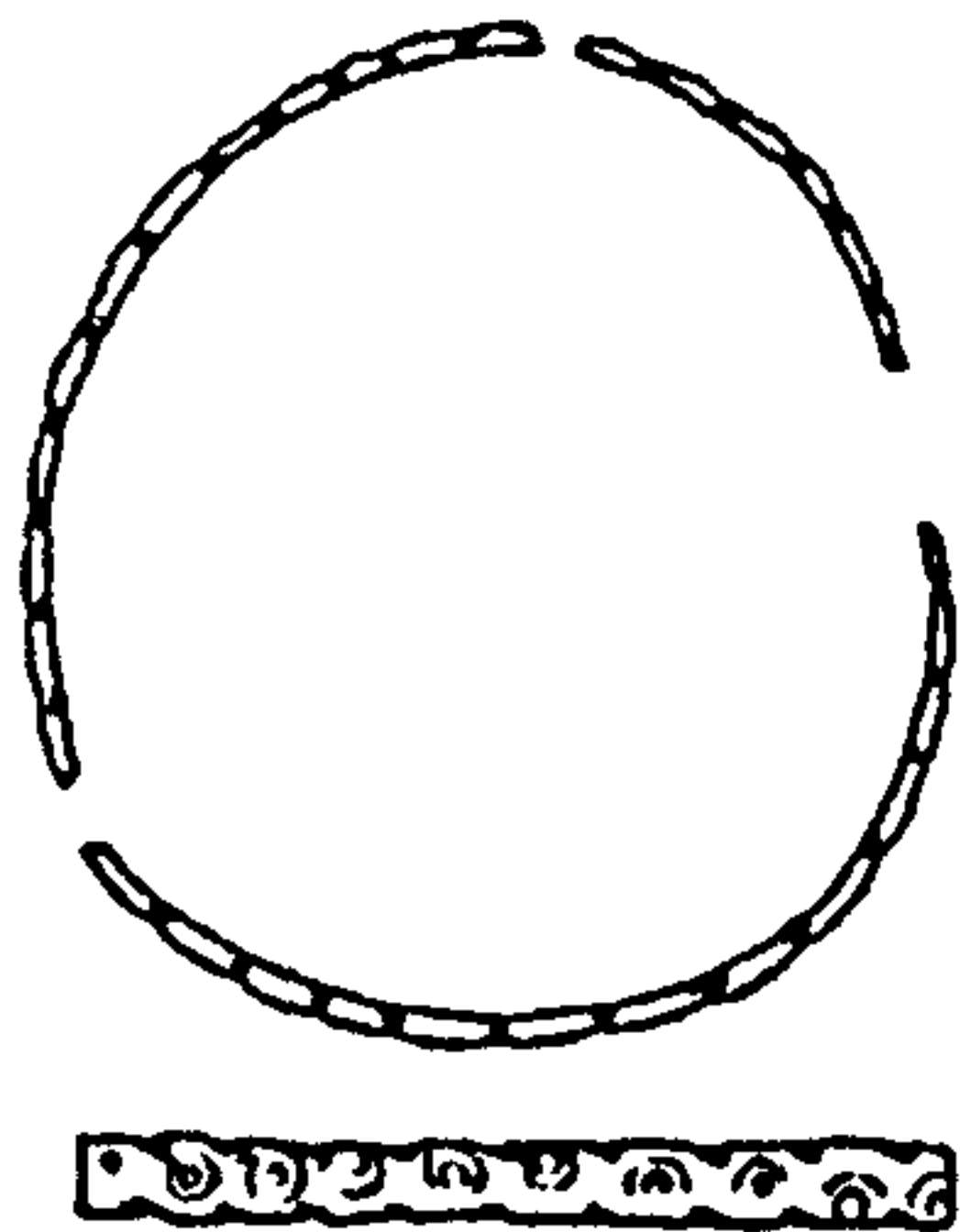
Augst  
Riha 1990 no.2796

b2 decoration



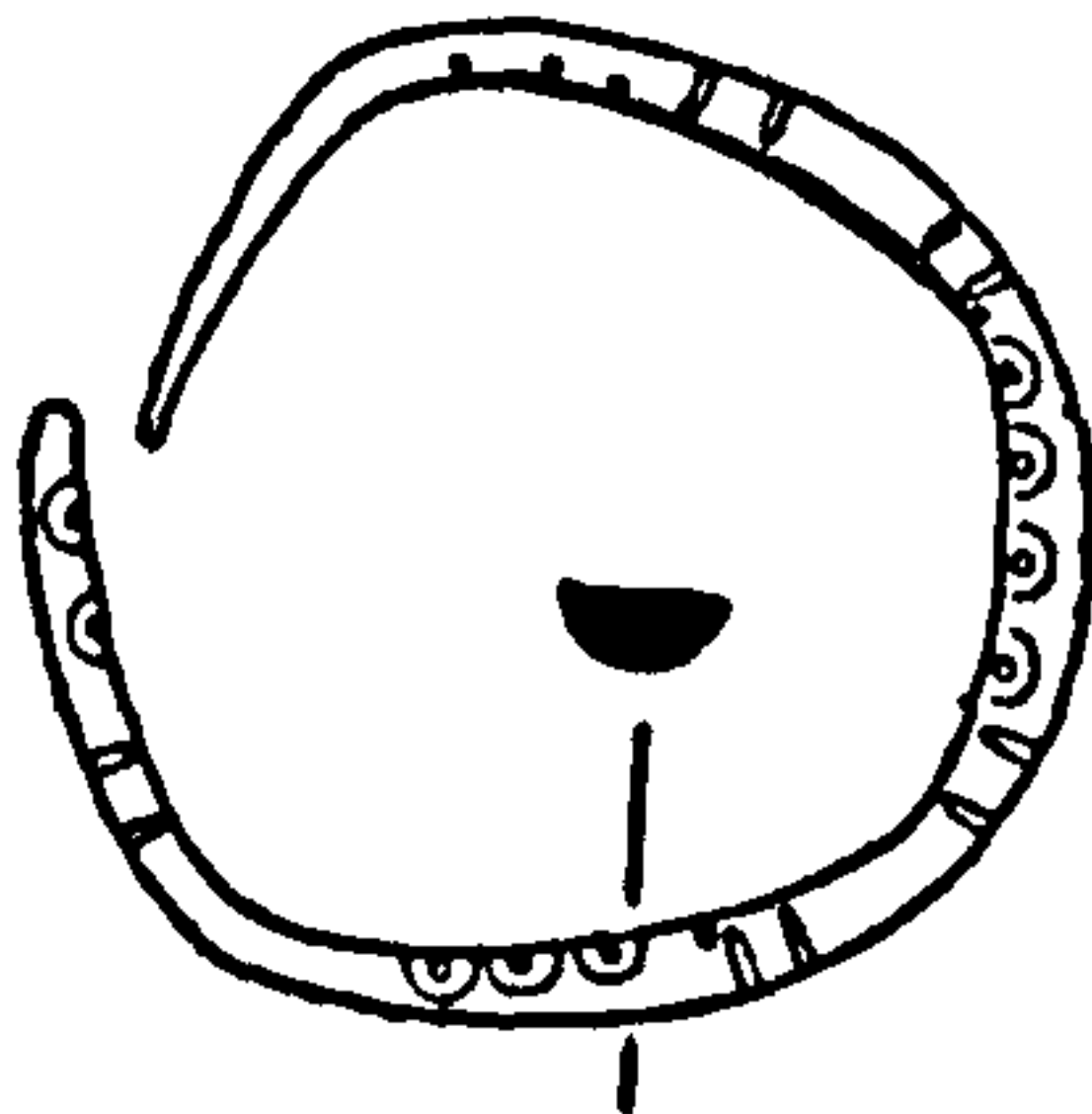
Augst  
Riha 1990 no.2824

b3 decoration



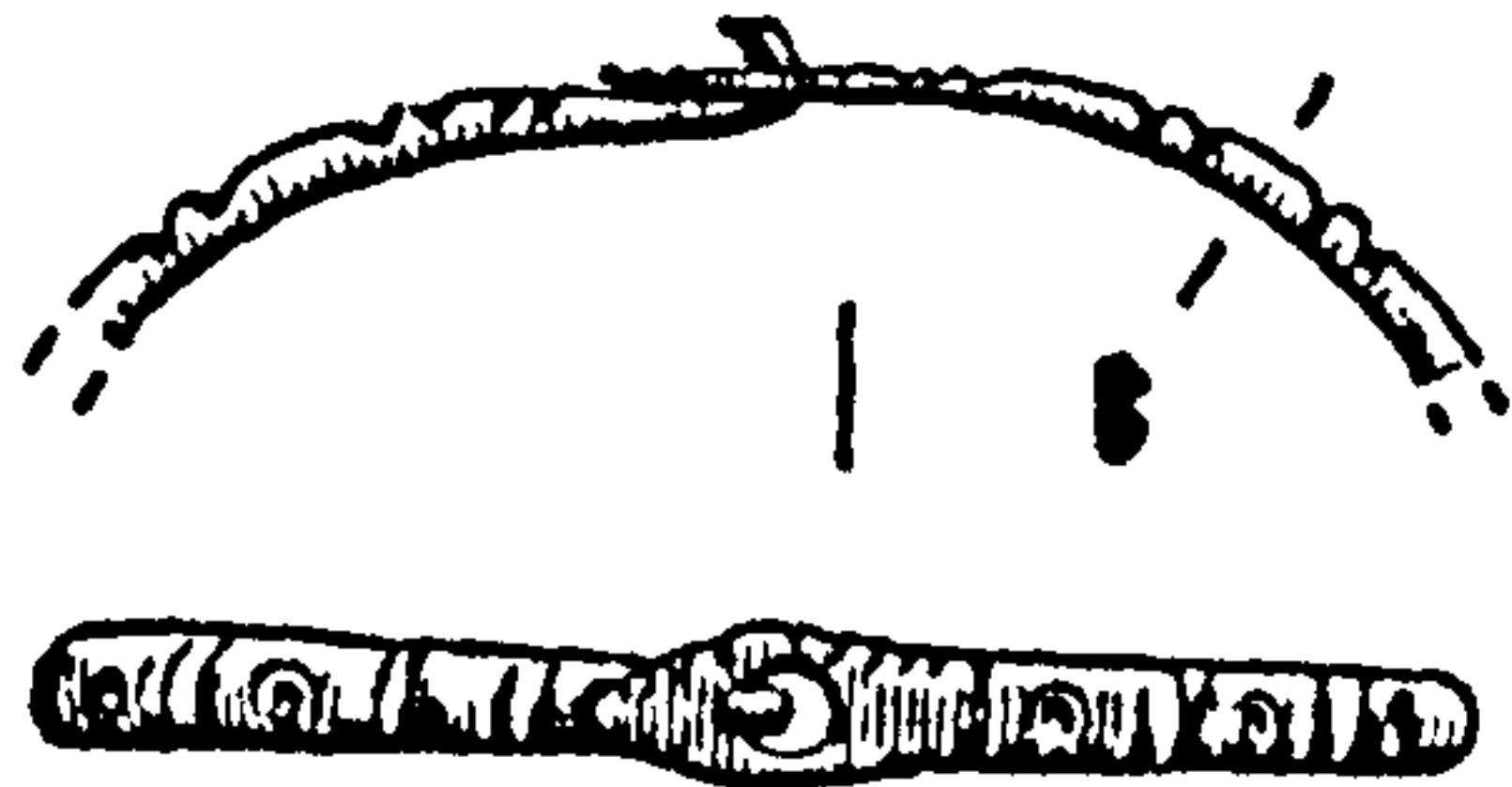
Oudenburg  
Mertens & Van Impe 1971  
pl.LXV gr.216 3

b10 decoration



Woodeaton  
Kirk & Leeds 1949 fig.4 9

Circle & dot decoration seperated by  
incised lines



Lankhills  
Clarke 1979 SF 110

b15 decoration

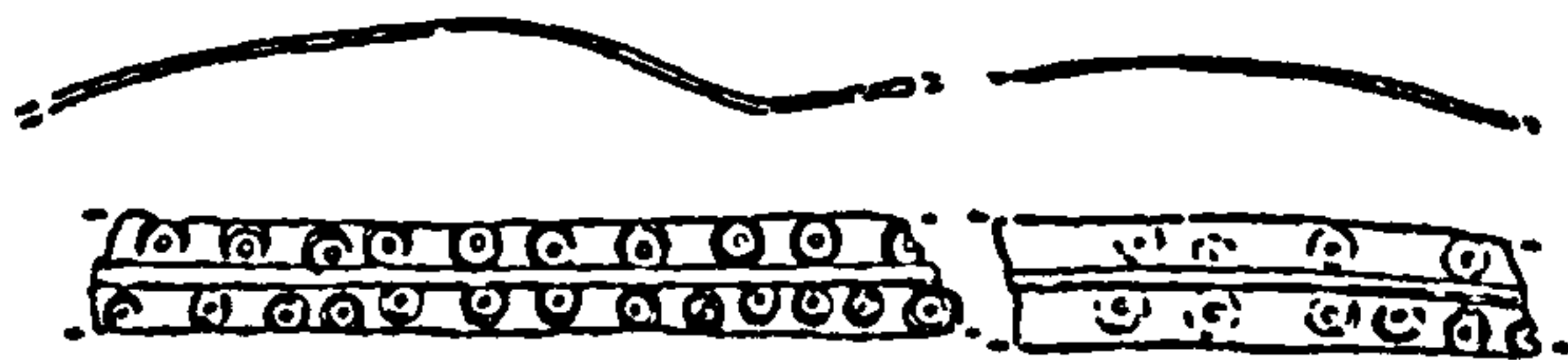


Tournai  
Brulet & Coulon 1977 gr.67 4

at varying scales



b16 decoration



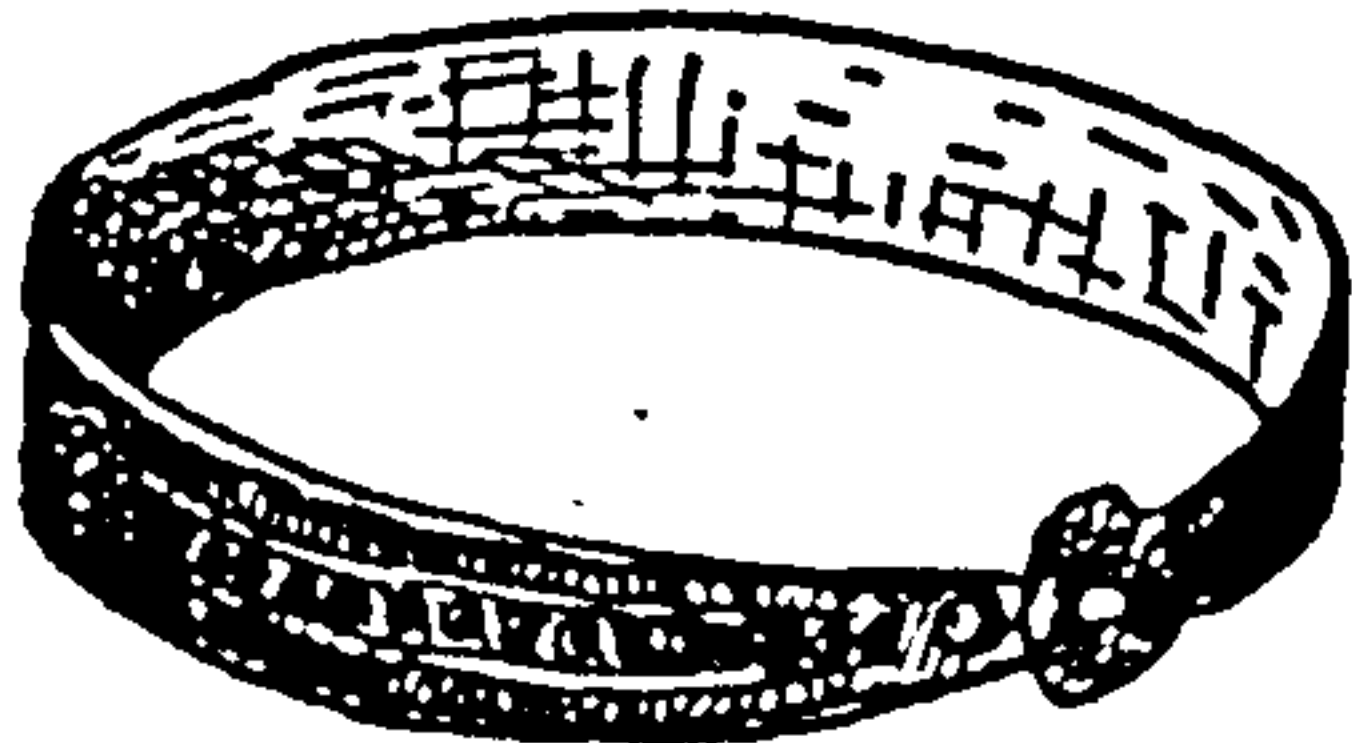
Augst  
Riha 1990 no.551

rosette motif



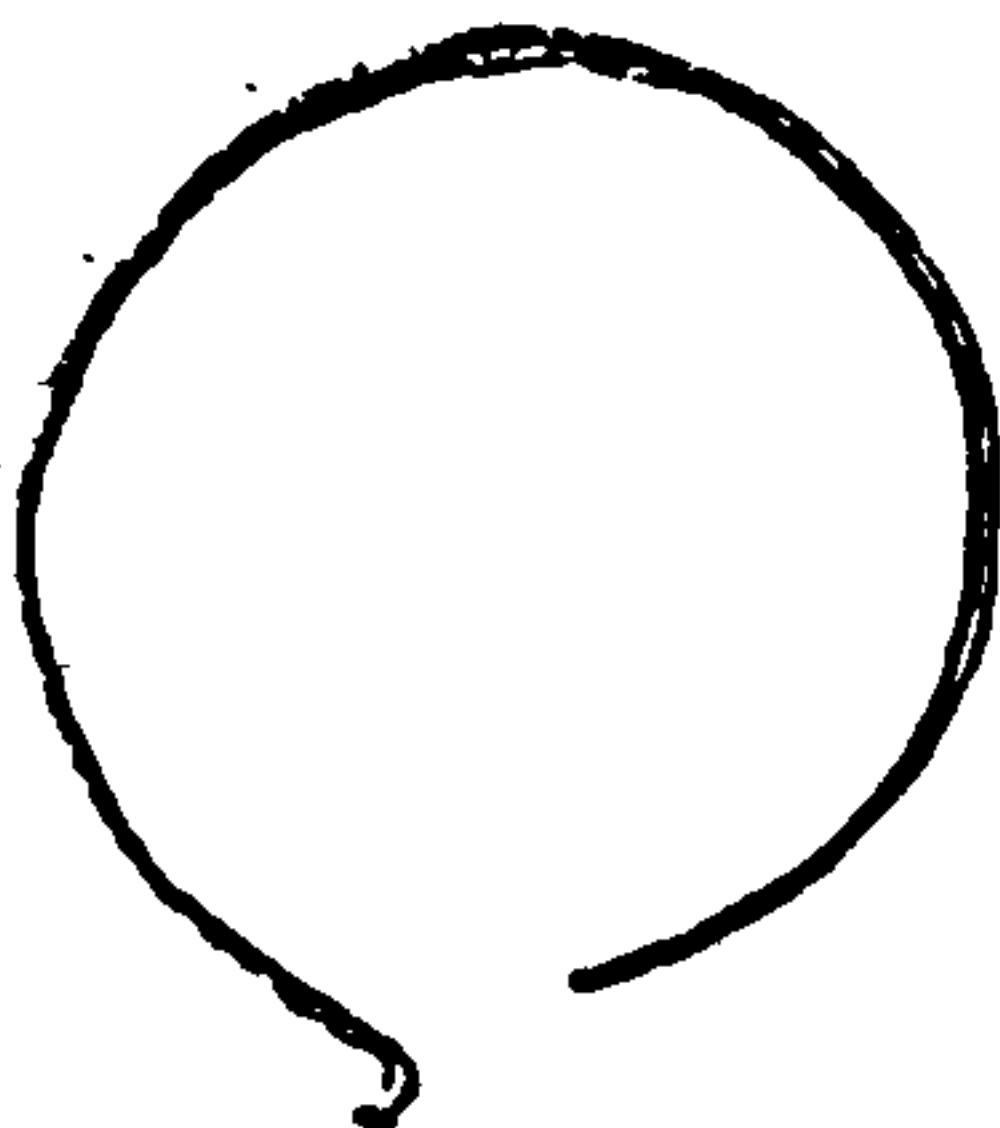
Fôret de Compiègne  
St.Germain-en-Laye 28960

b31 & related decoration



Damery    Brisson et al 1969 pl.III 15

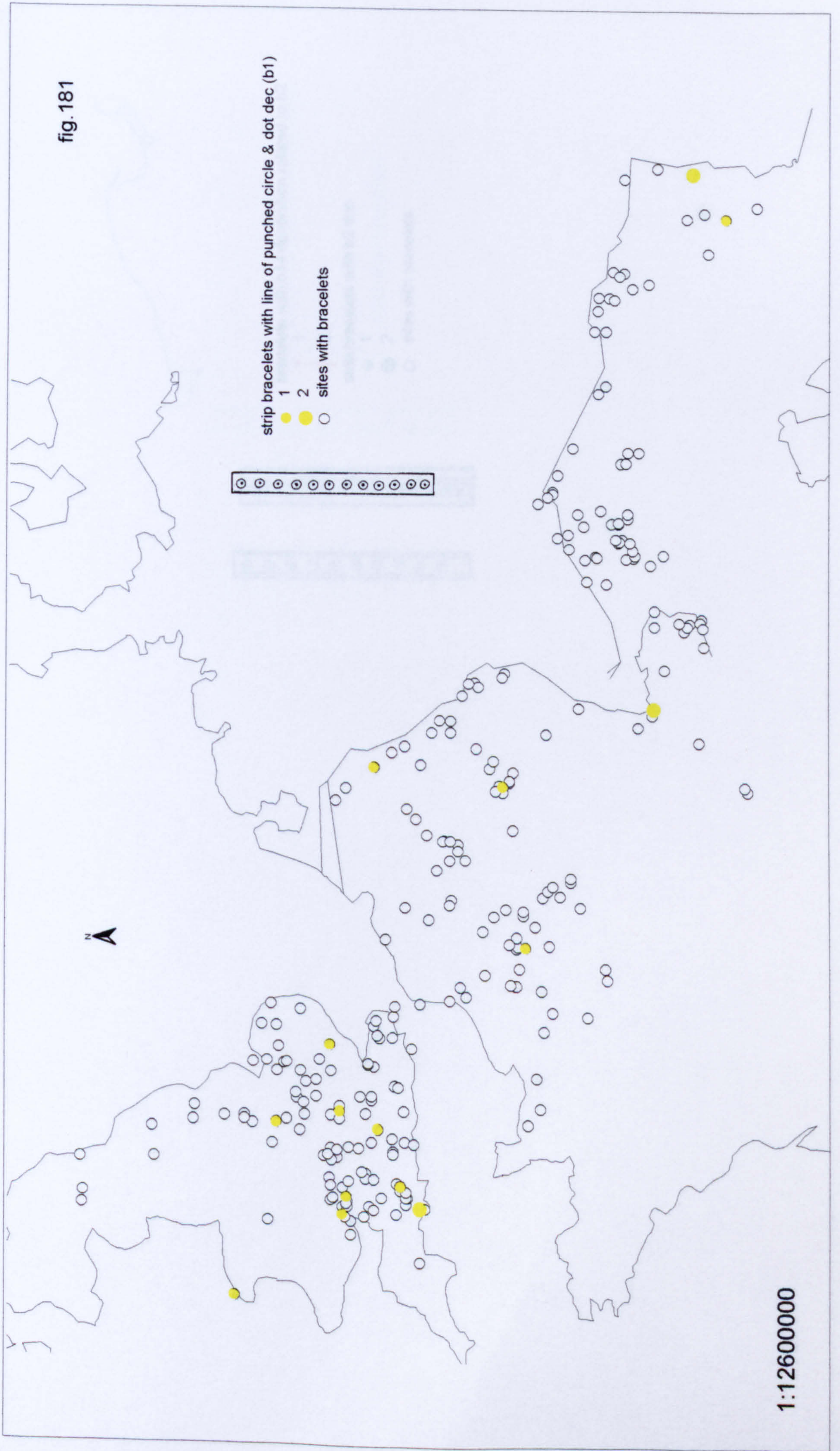
h4 decoration



Köln  
Carrol-Spillecke 1993 abb.44 9

at varying scales







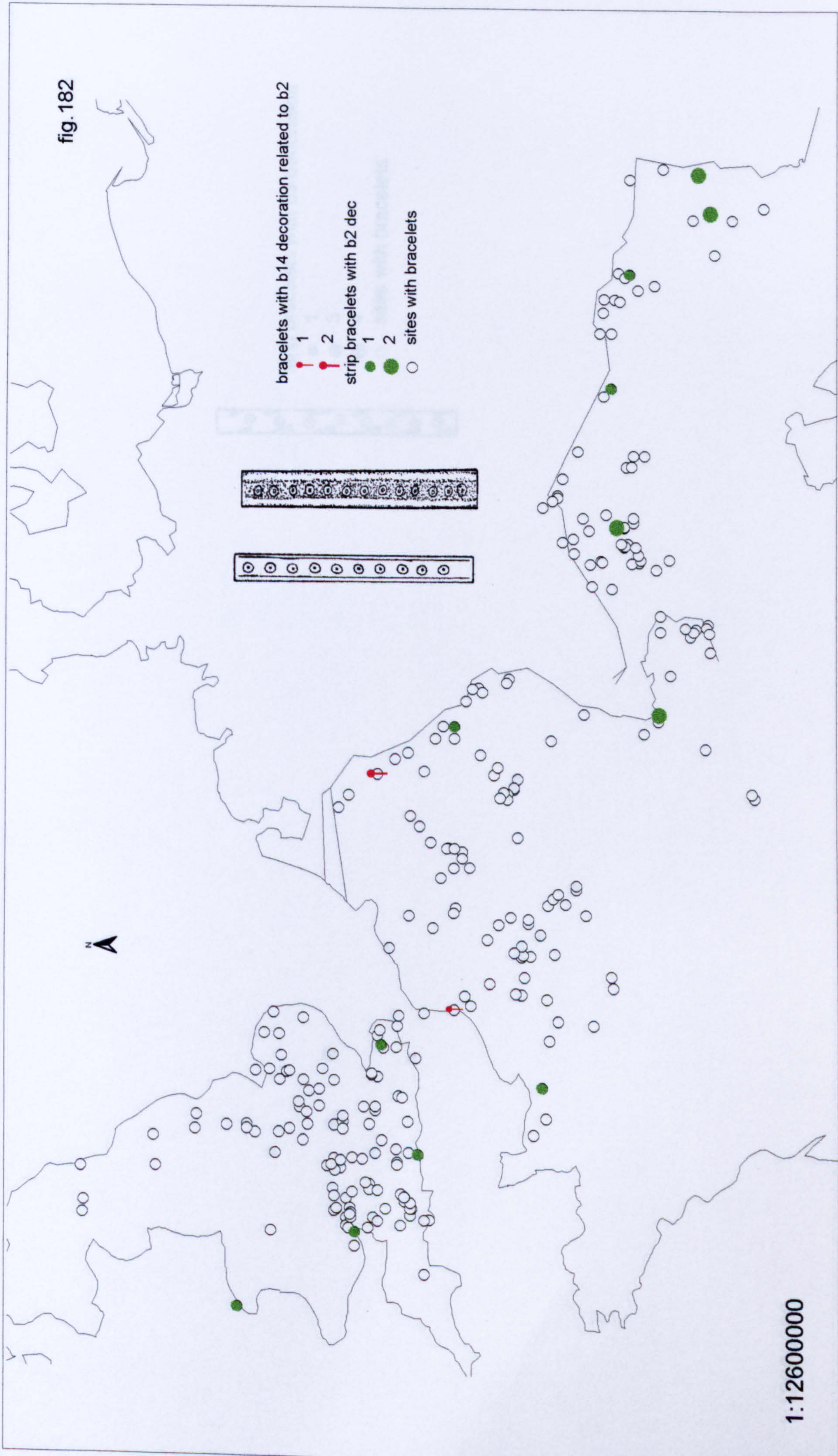


fig. 182

1:12600000



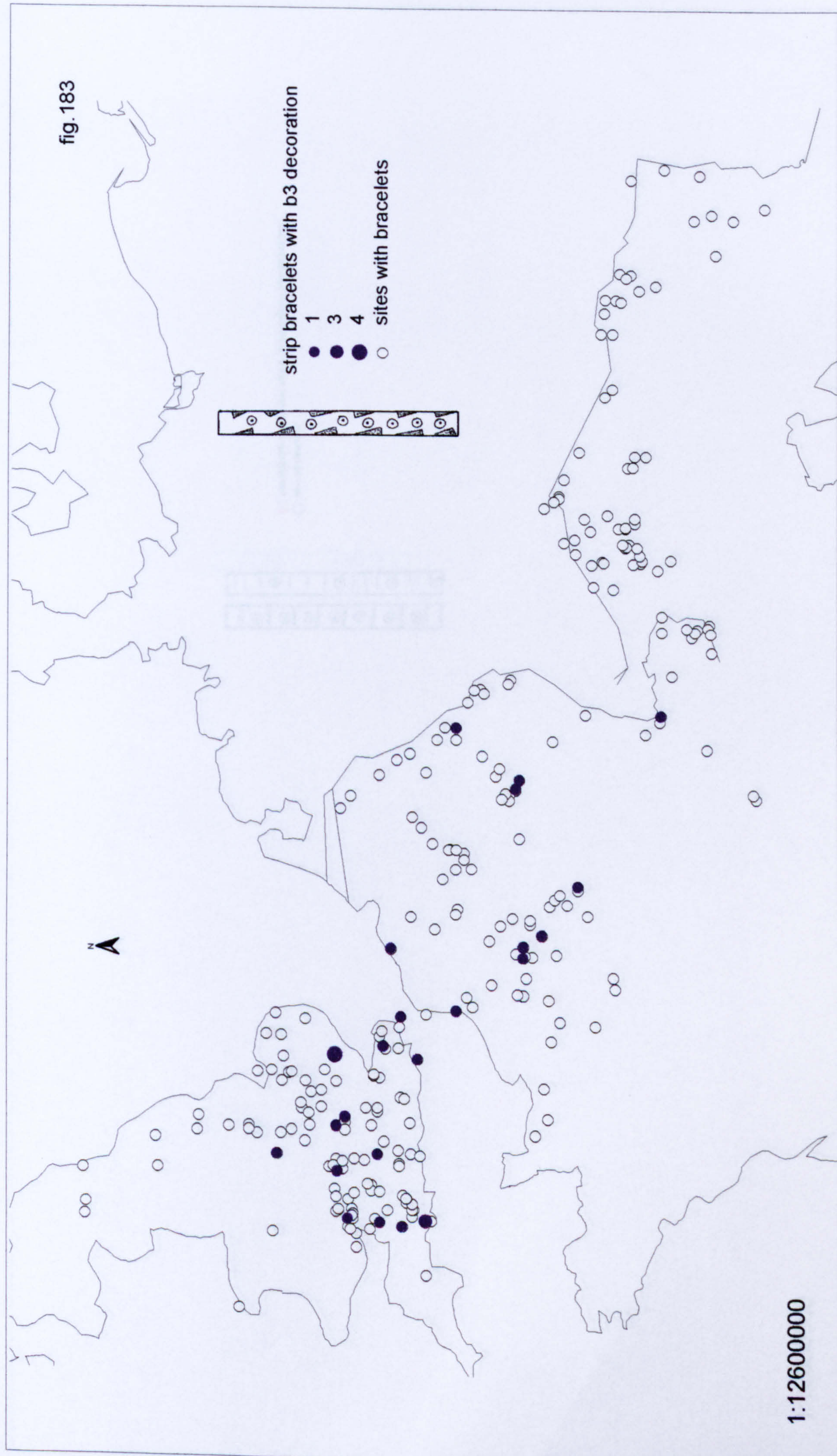


fig. 183

1:12600000



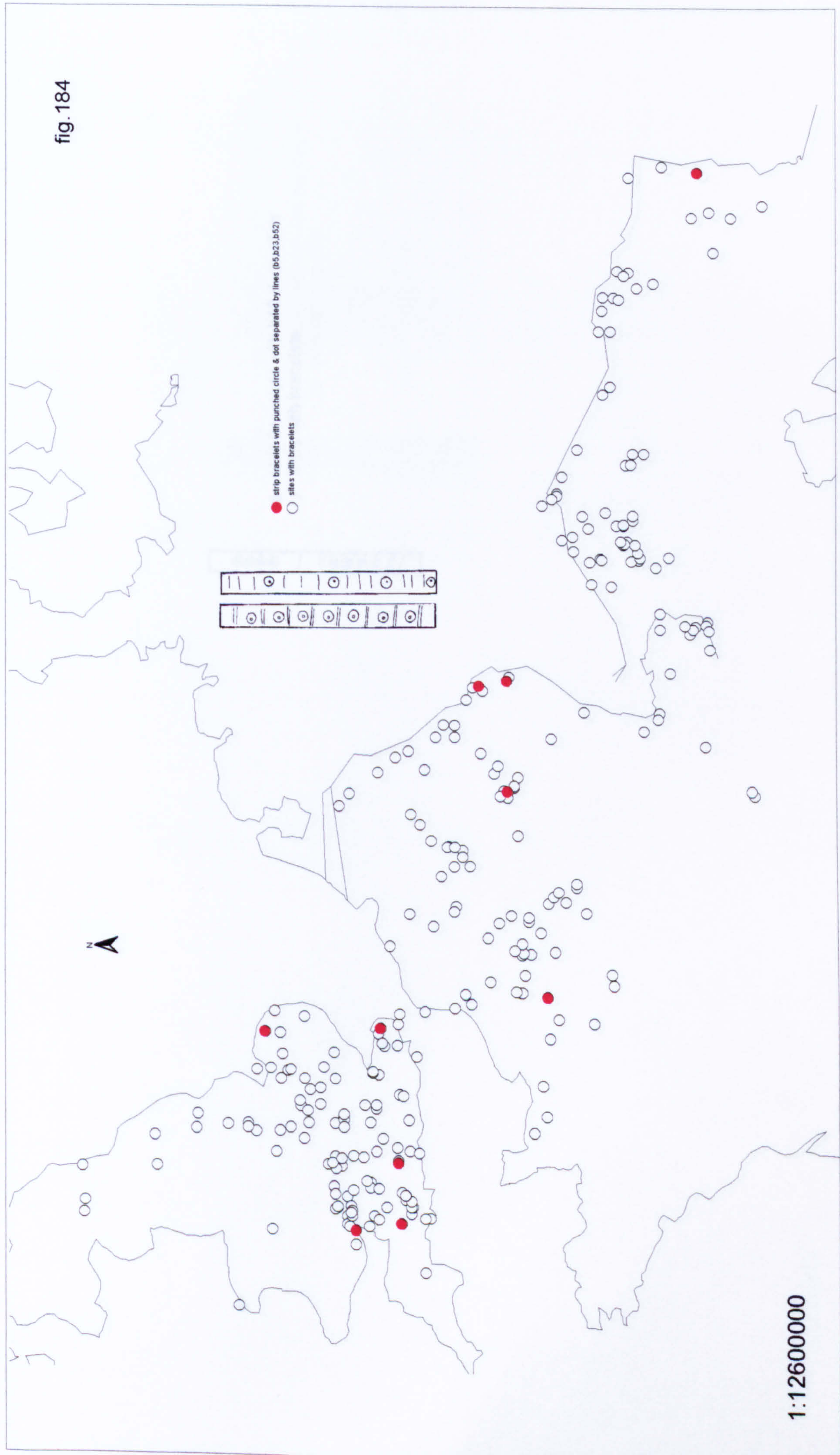
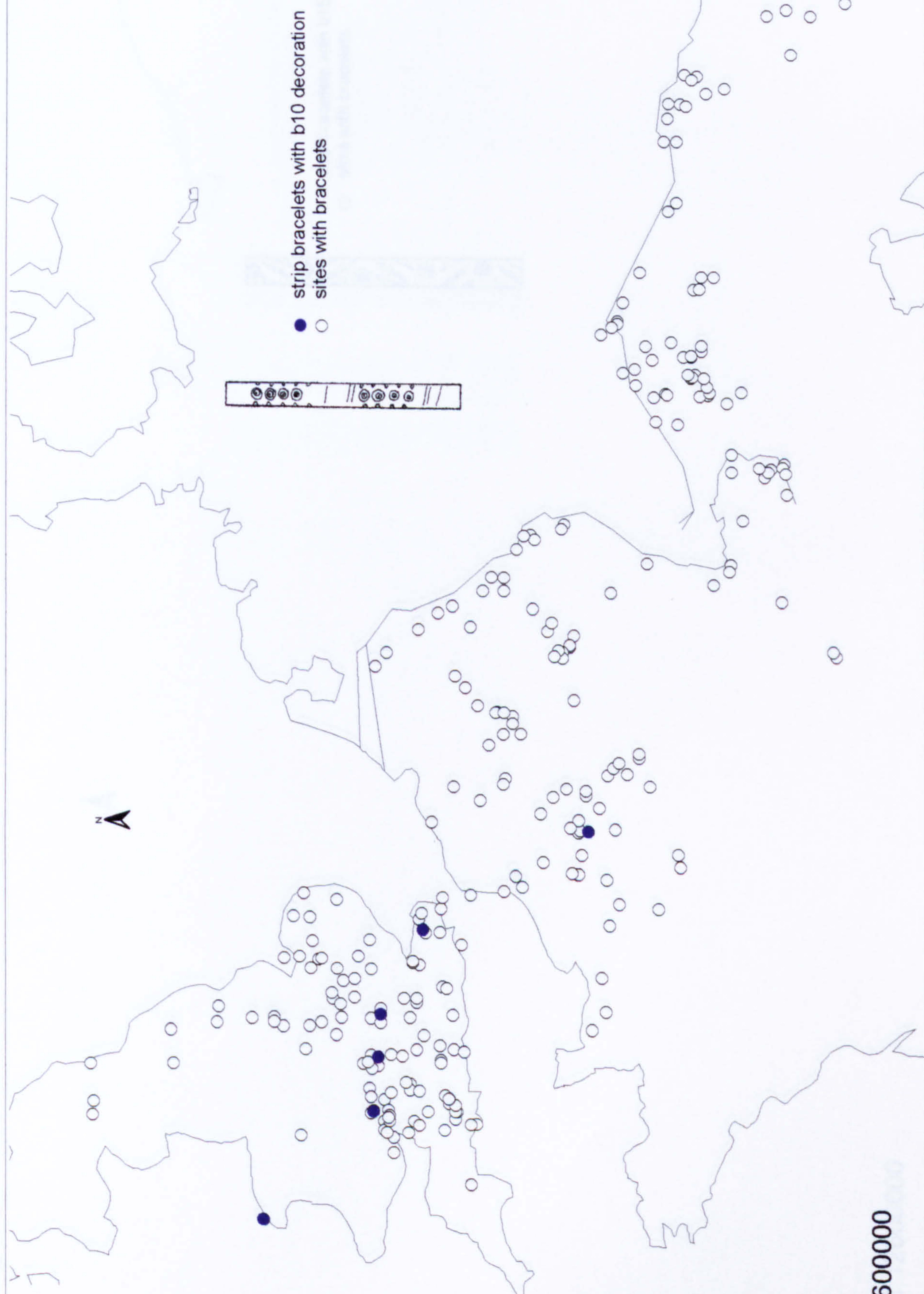


fig. 184

1:12600000

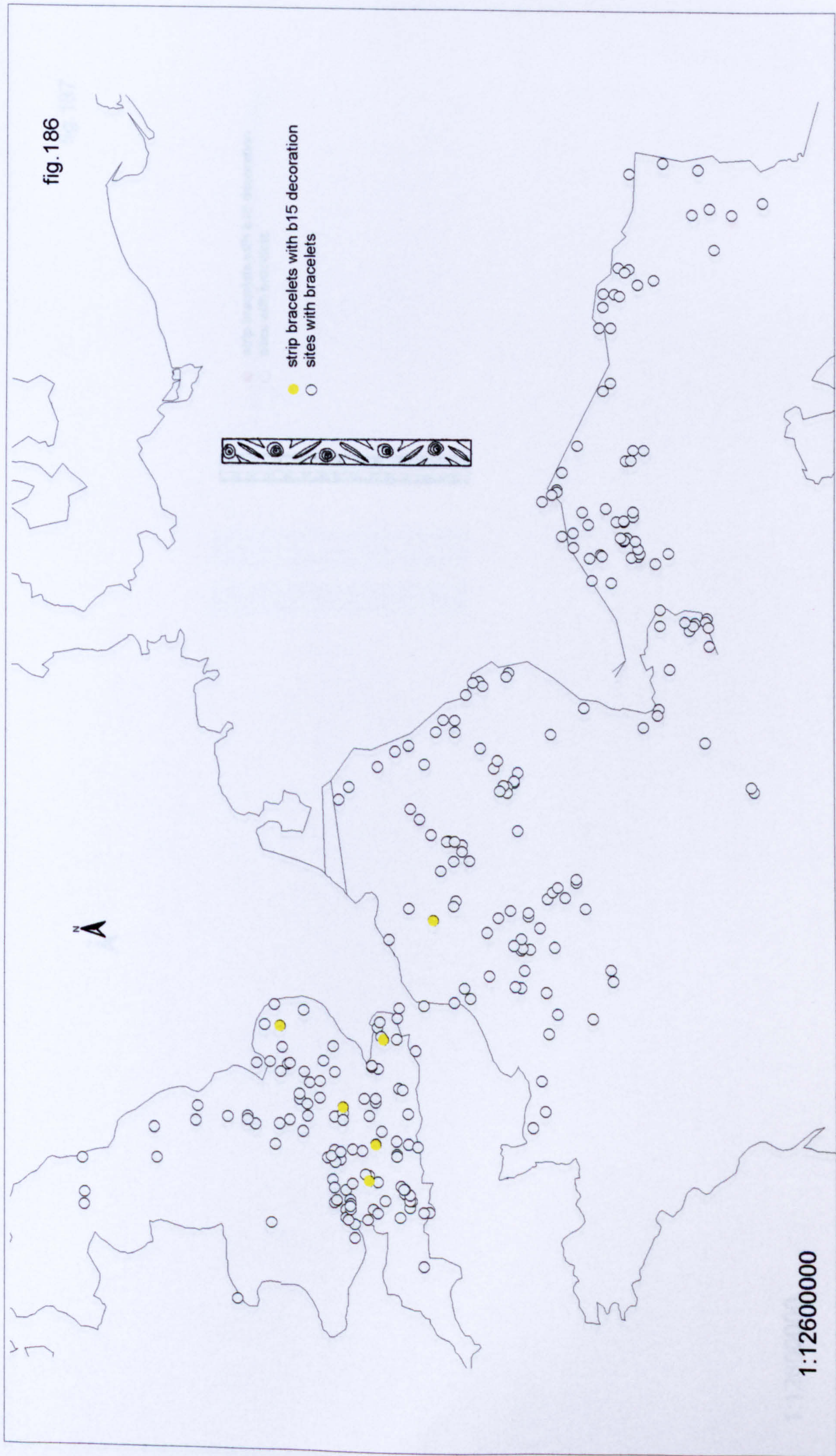


fig. 185



1:12600000







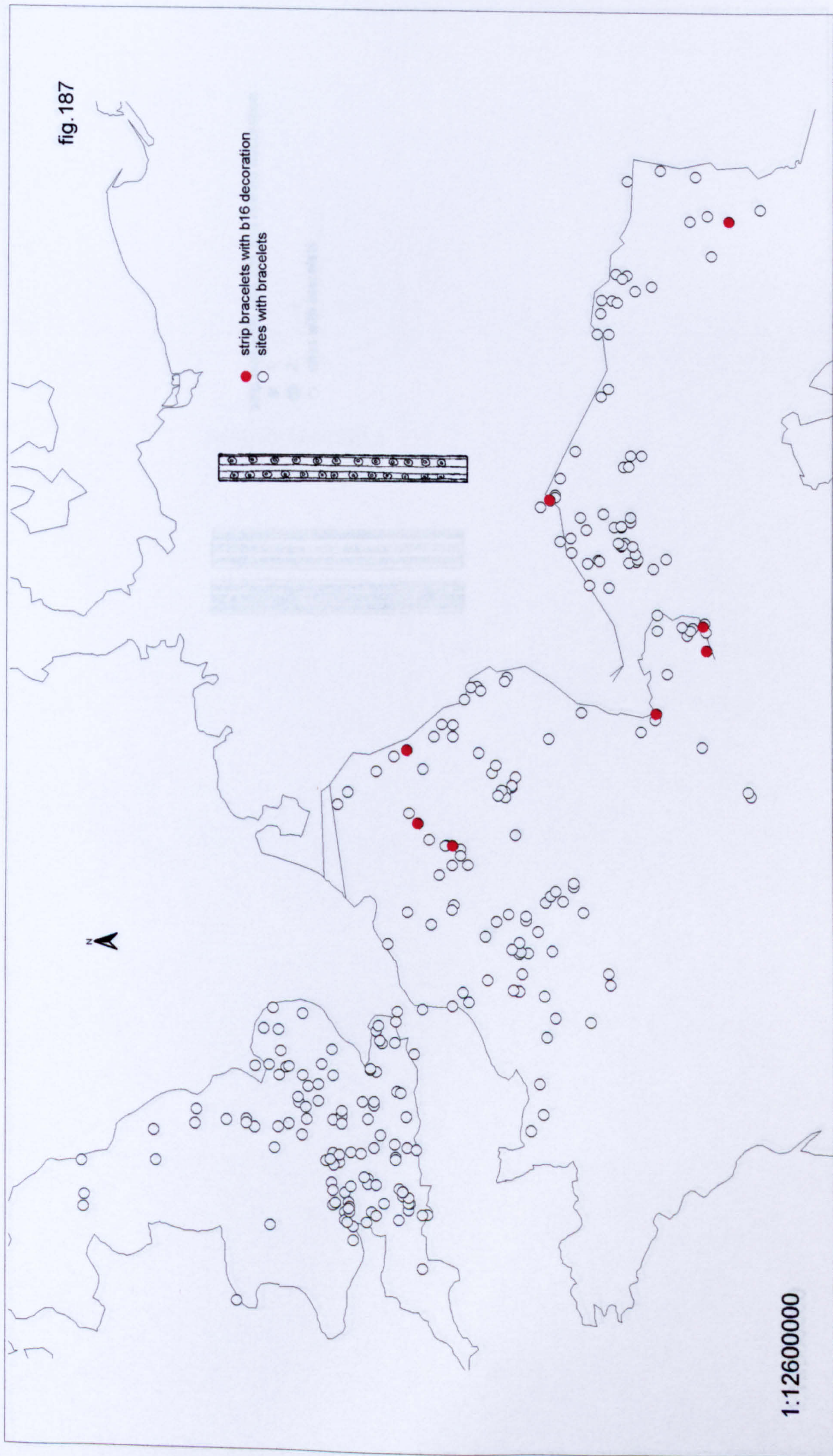


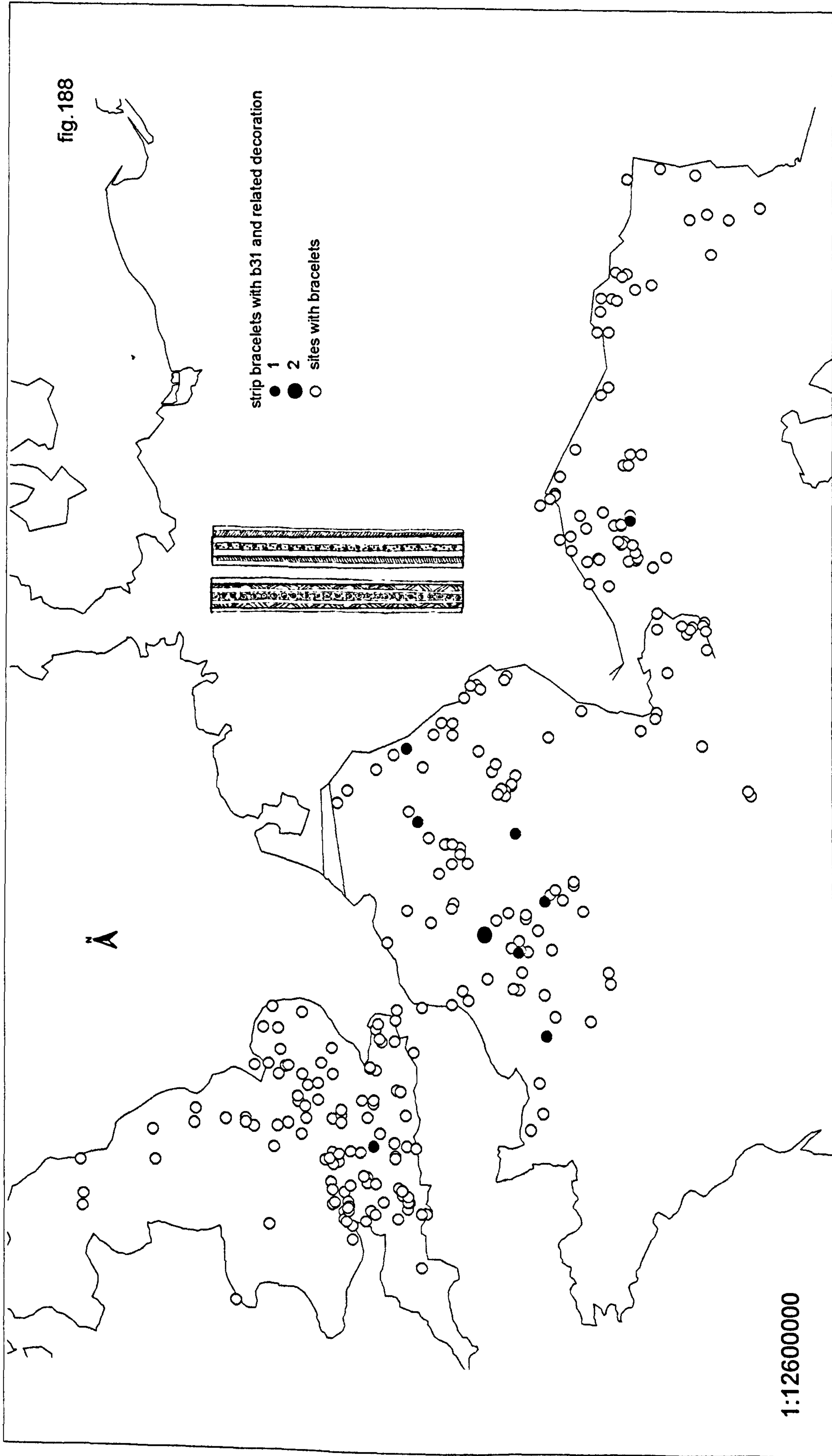
fig.187

strip bracelets with b16 decoration  
sites with bracelets

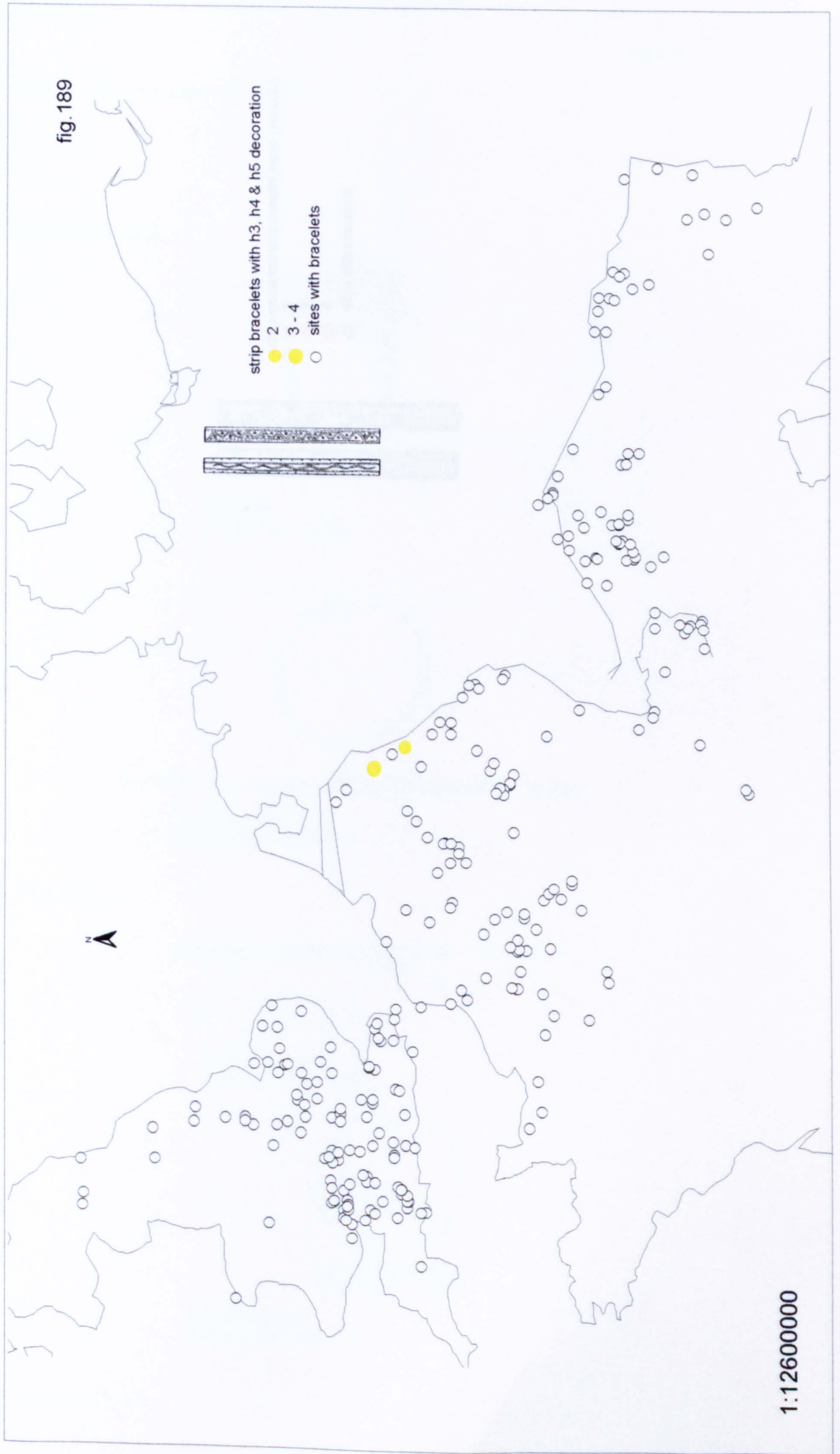


1:12600000











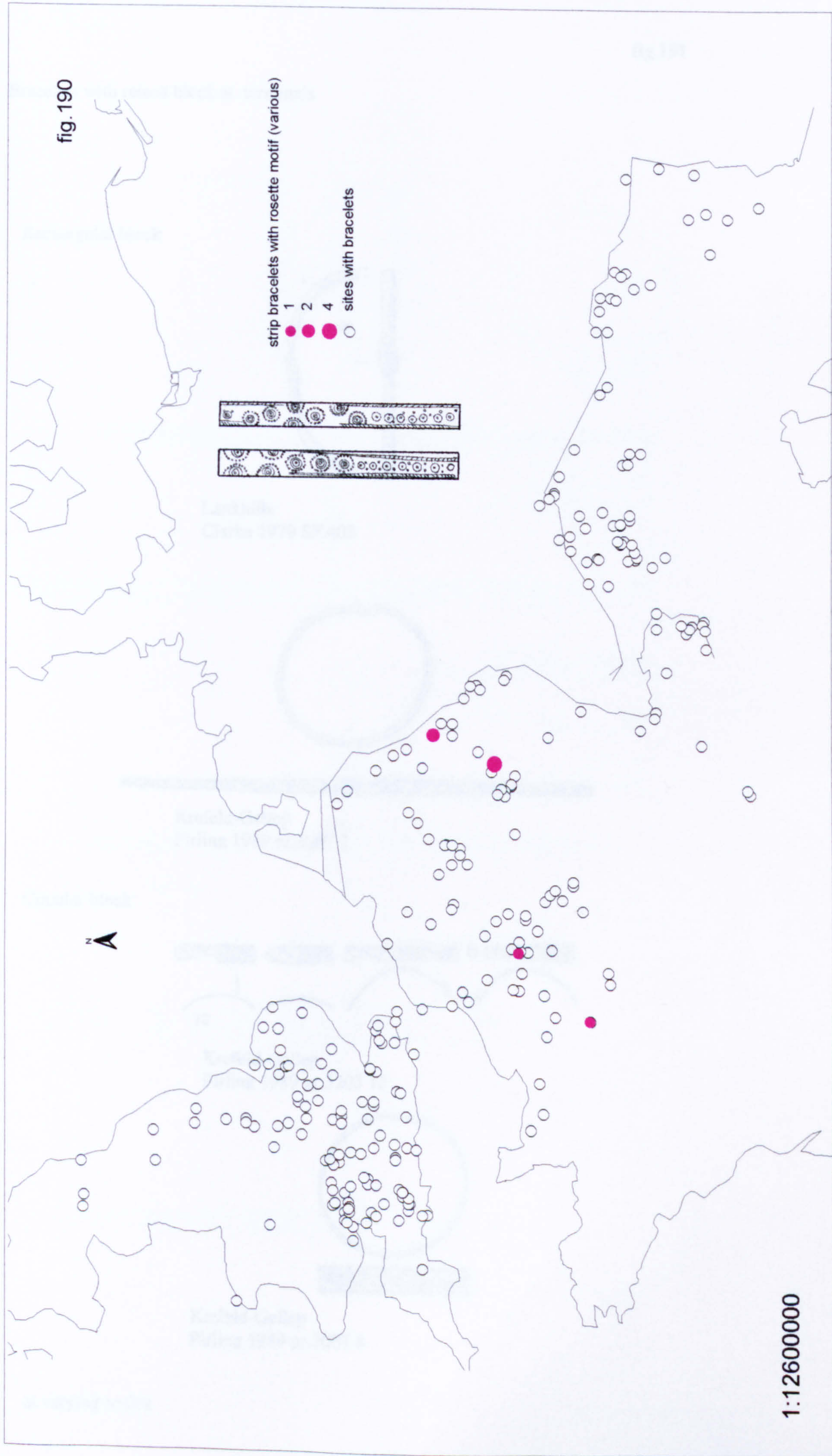


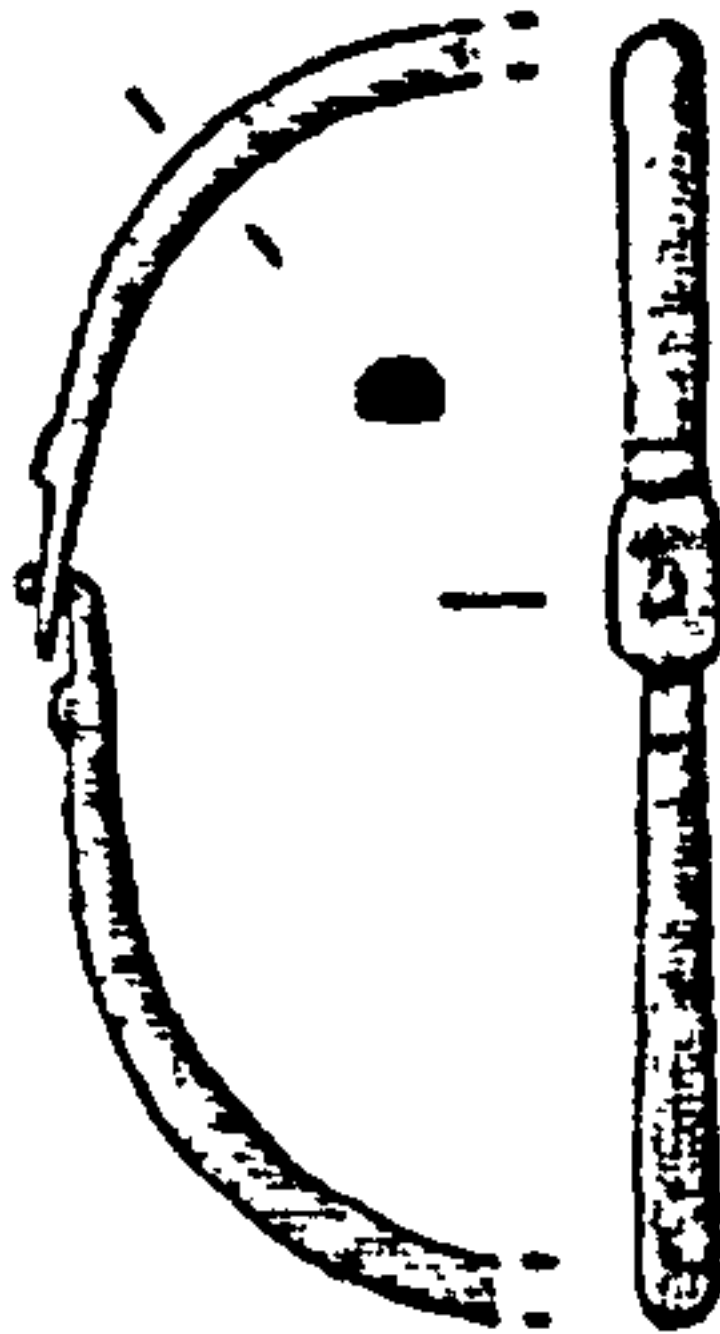
fig.190

1:12600000

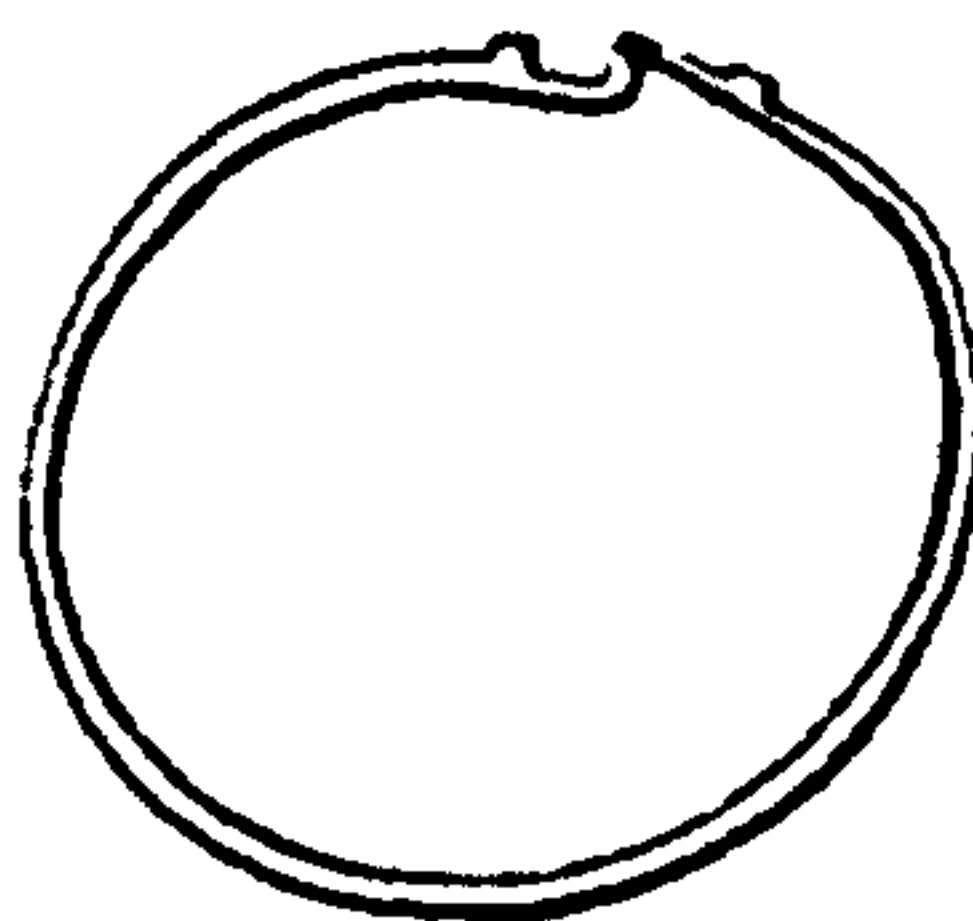


Bracelets with raised block at terminals

Rectangular block

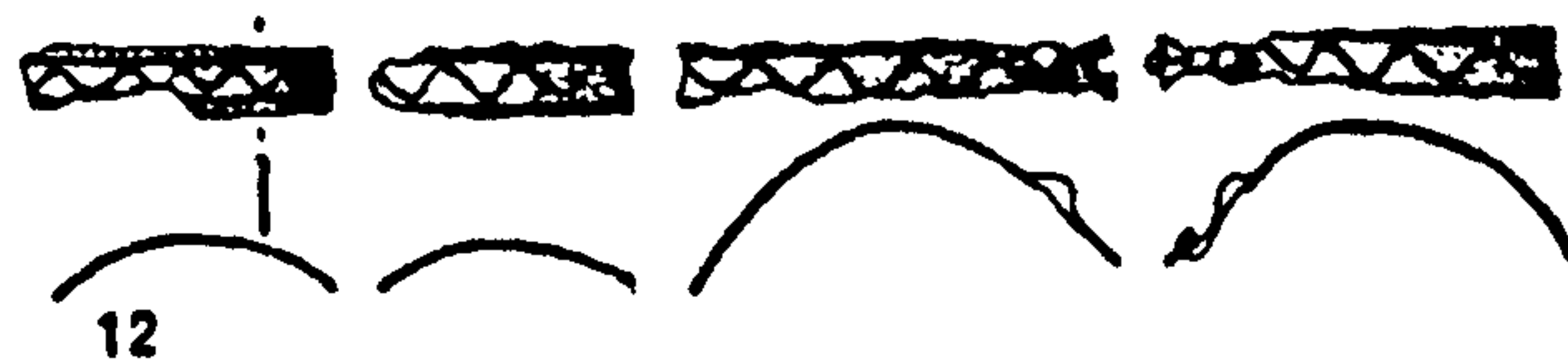


Lankhills  
Clarke 1979 SF.403

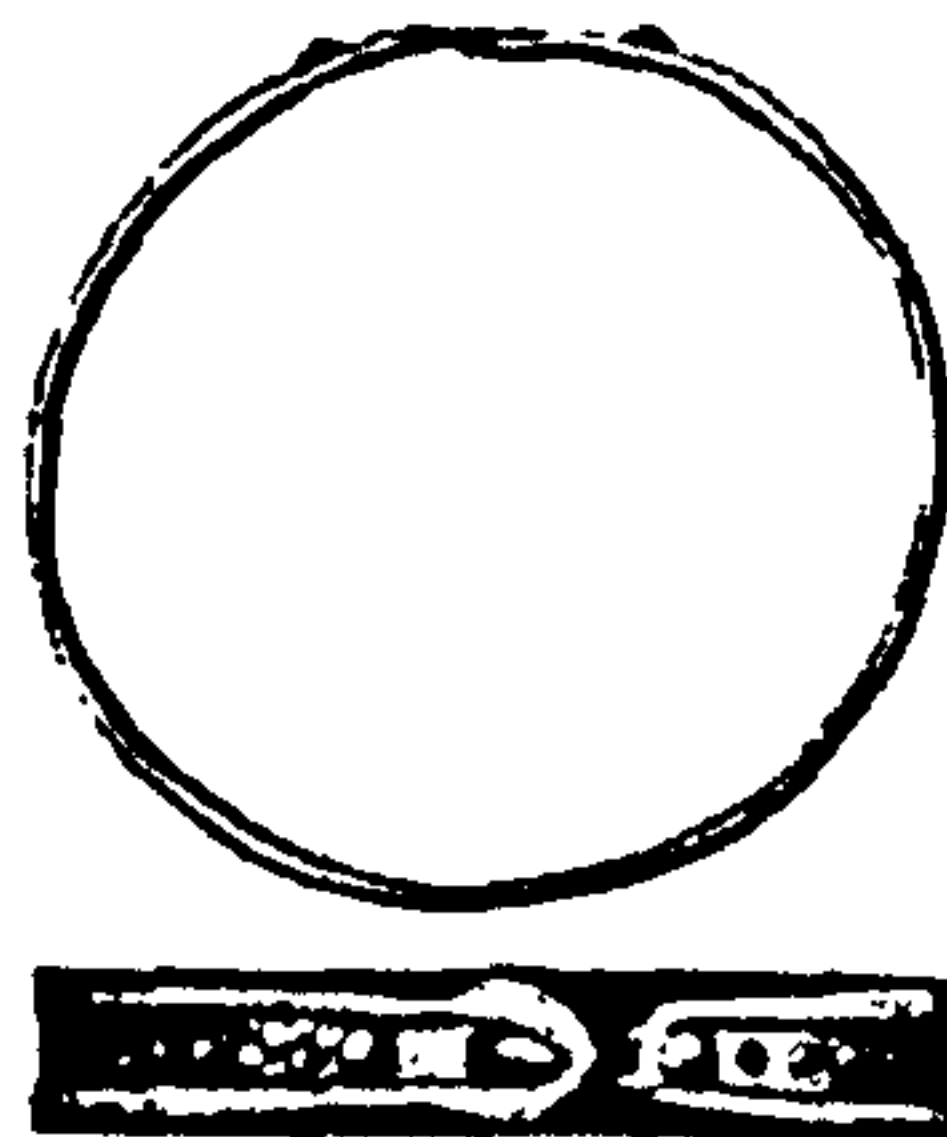


Krefeld-Gellep  
Pirling 1989 gr.3007 2

Circular block



Krefeld-Gellep  
Pirling 1989 gr.3203 12

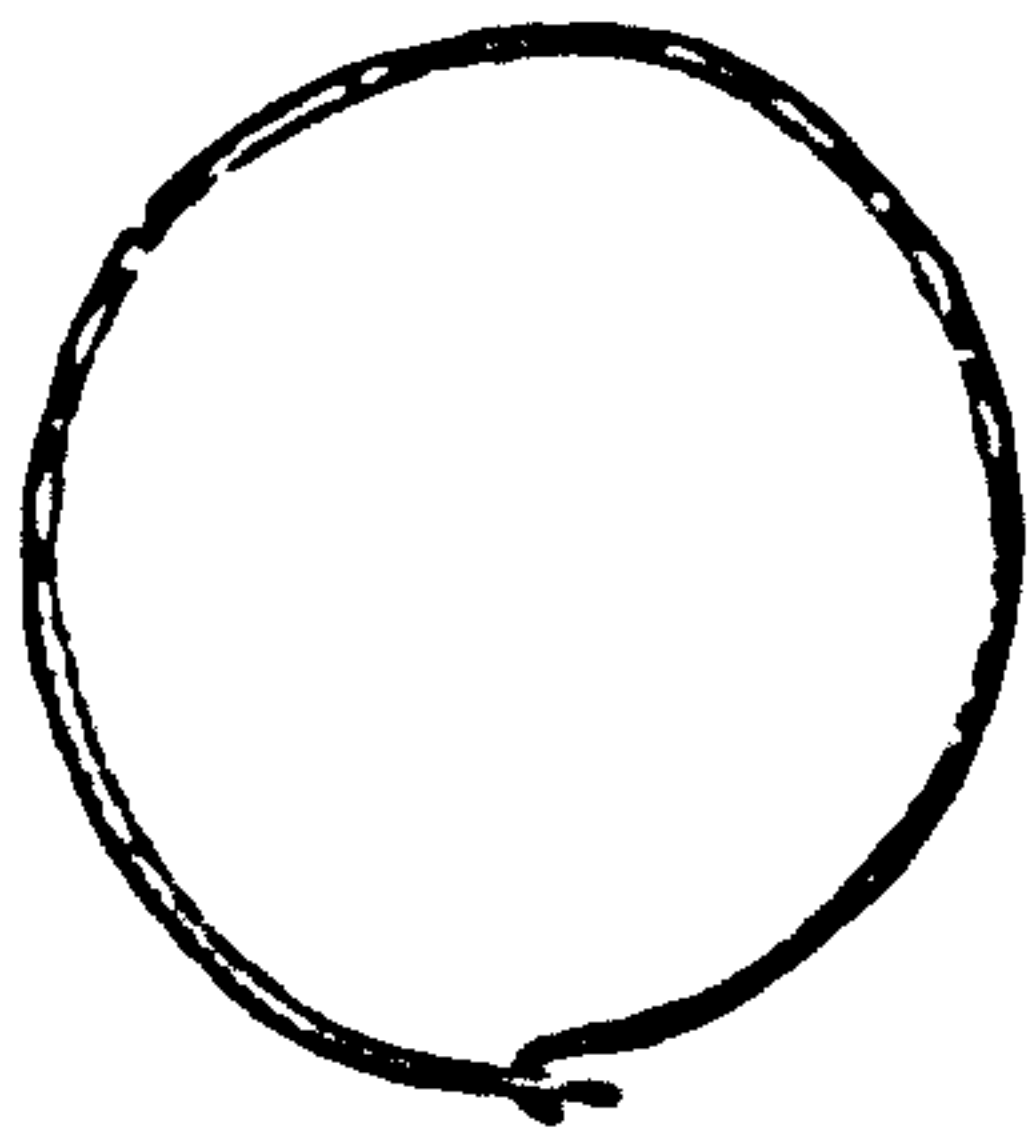


Krefeld-Gellep  
Pirling 1989 gr.3007 4

at varying scales



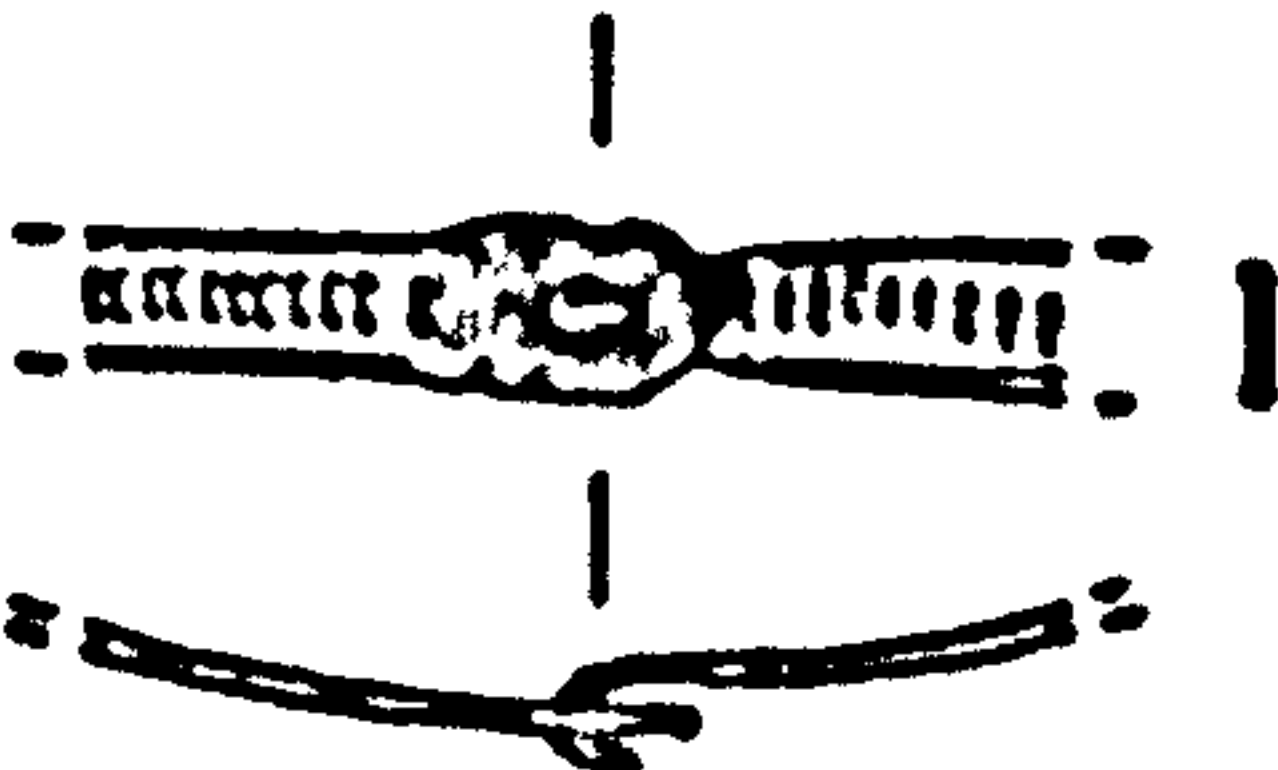
Bracelets with multiple motifs



motif D



Krefeld-Gellep  
Pirling 1966 gr.594 9



motif E

Lankhills  
Clarke 1979 SF.107



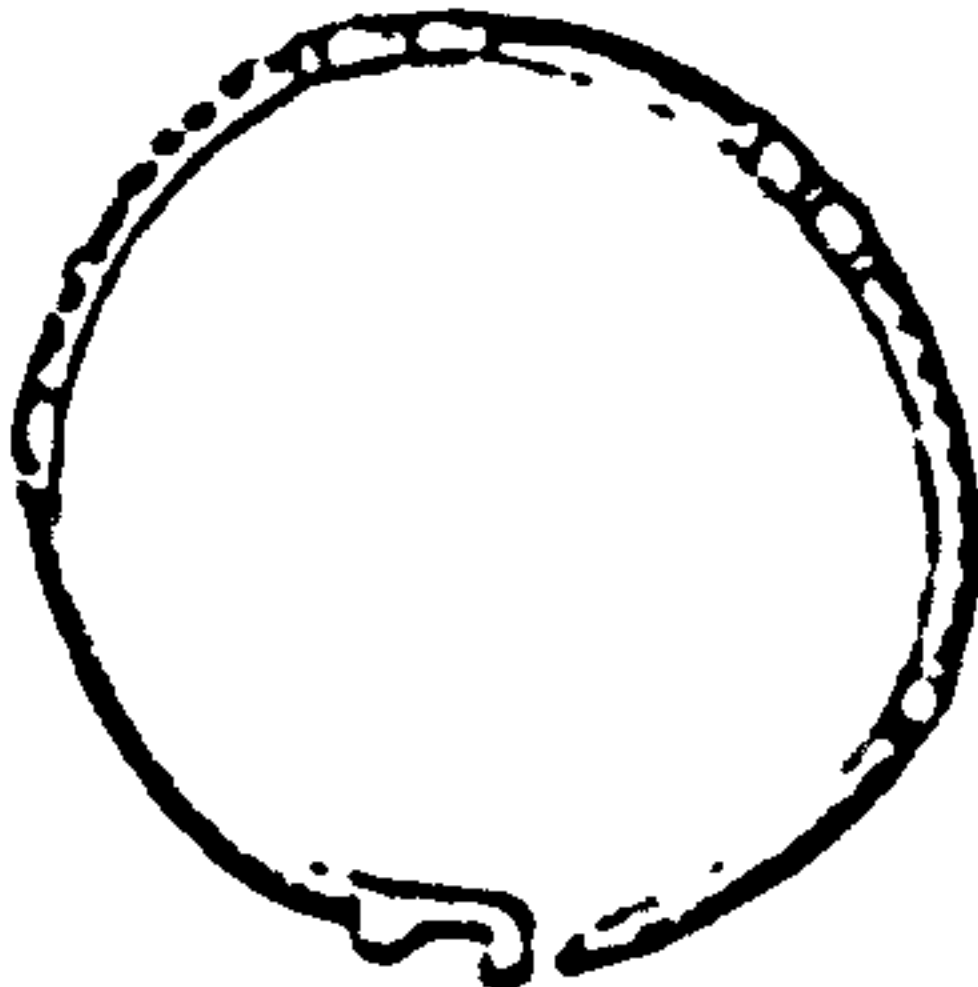
Colchester  
Crummy 1983 no.1732

motif F



motif G

Lydney  
Wheeler & Wheeler 1932 fig.17 D

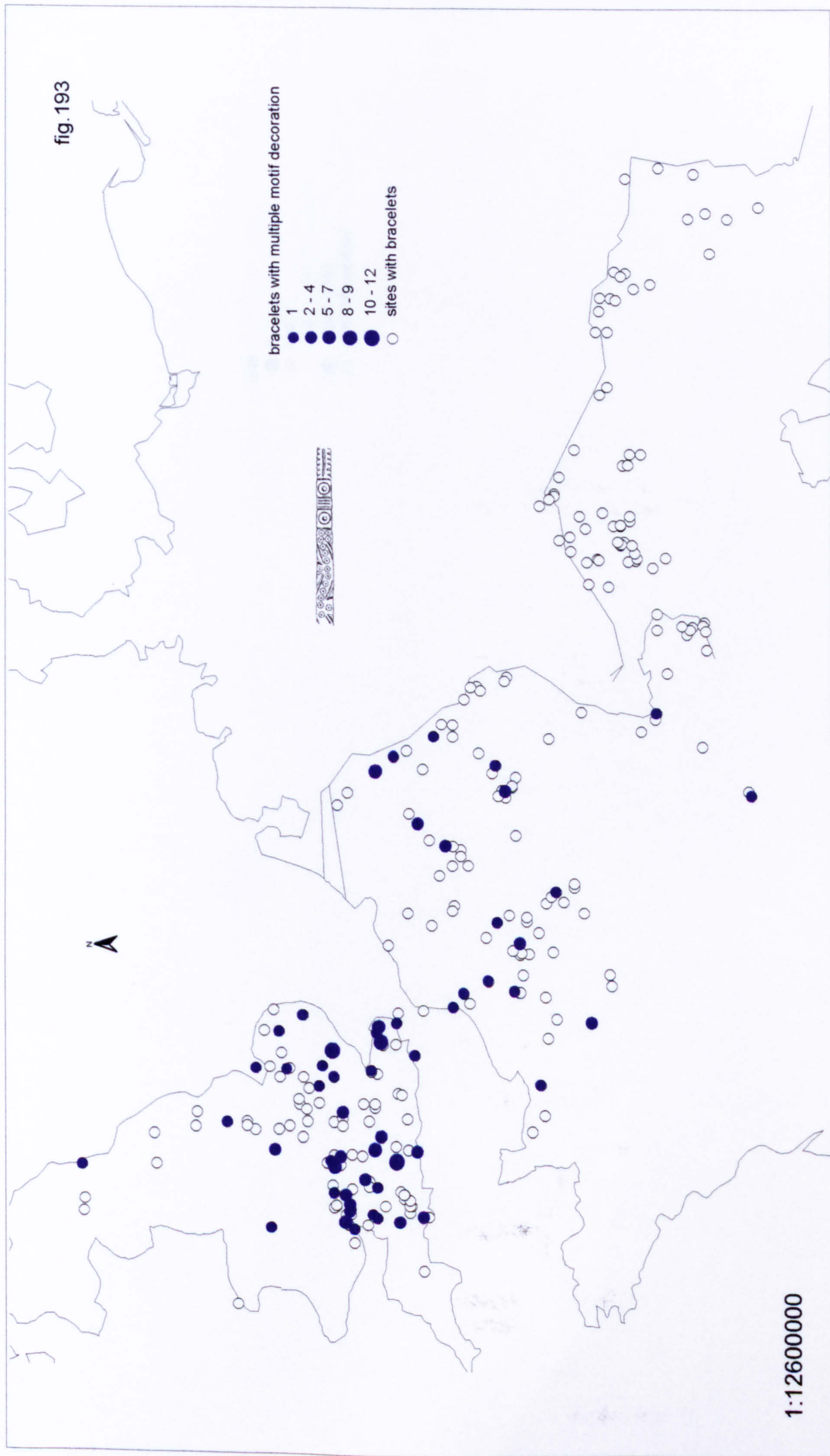


Colchester  
Crummy 1983 1730

motif H

at varying scales







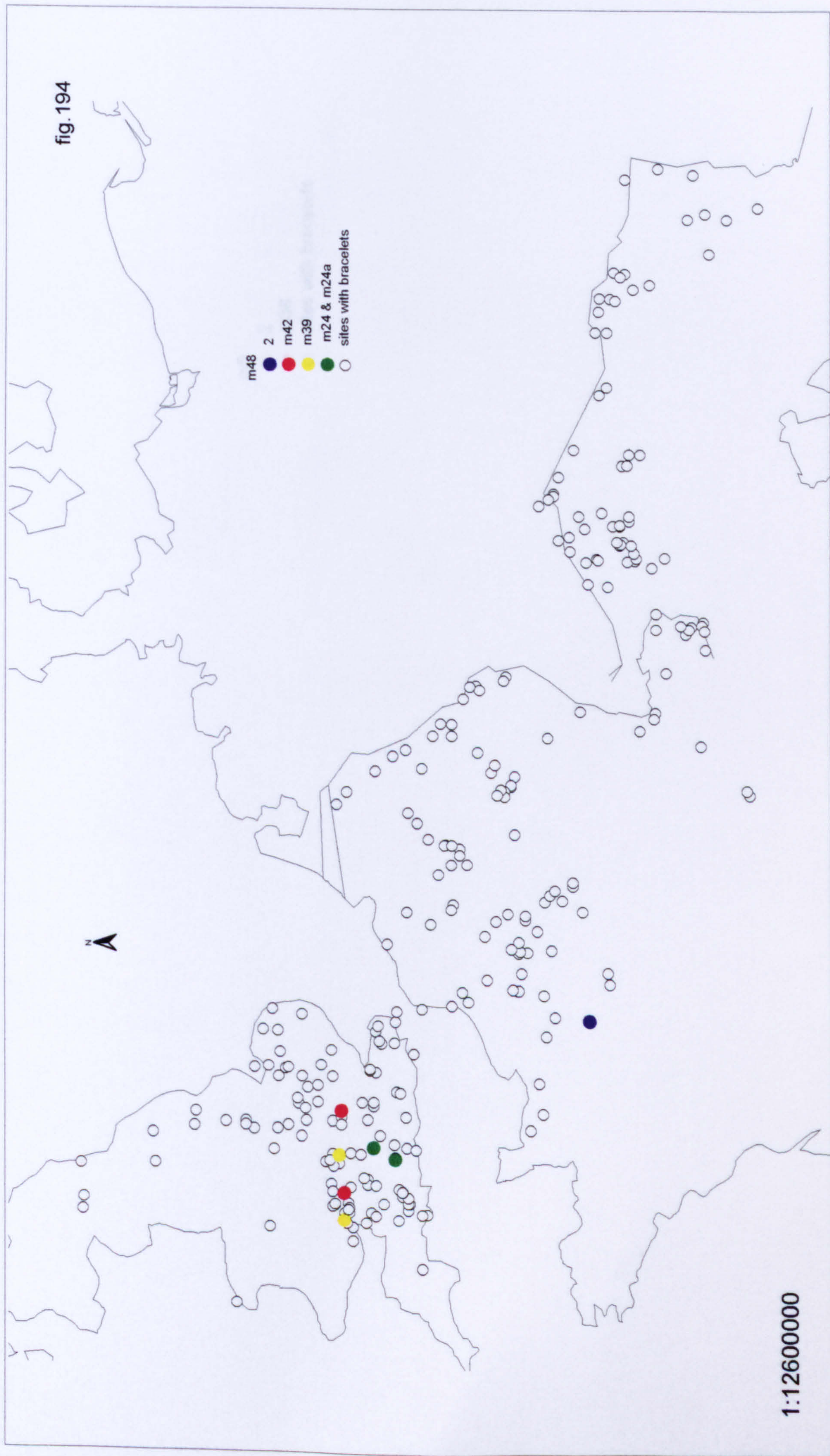


fig. 194

1:12600000



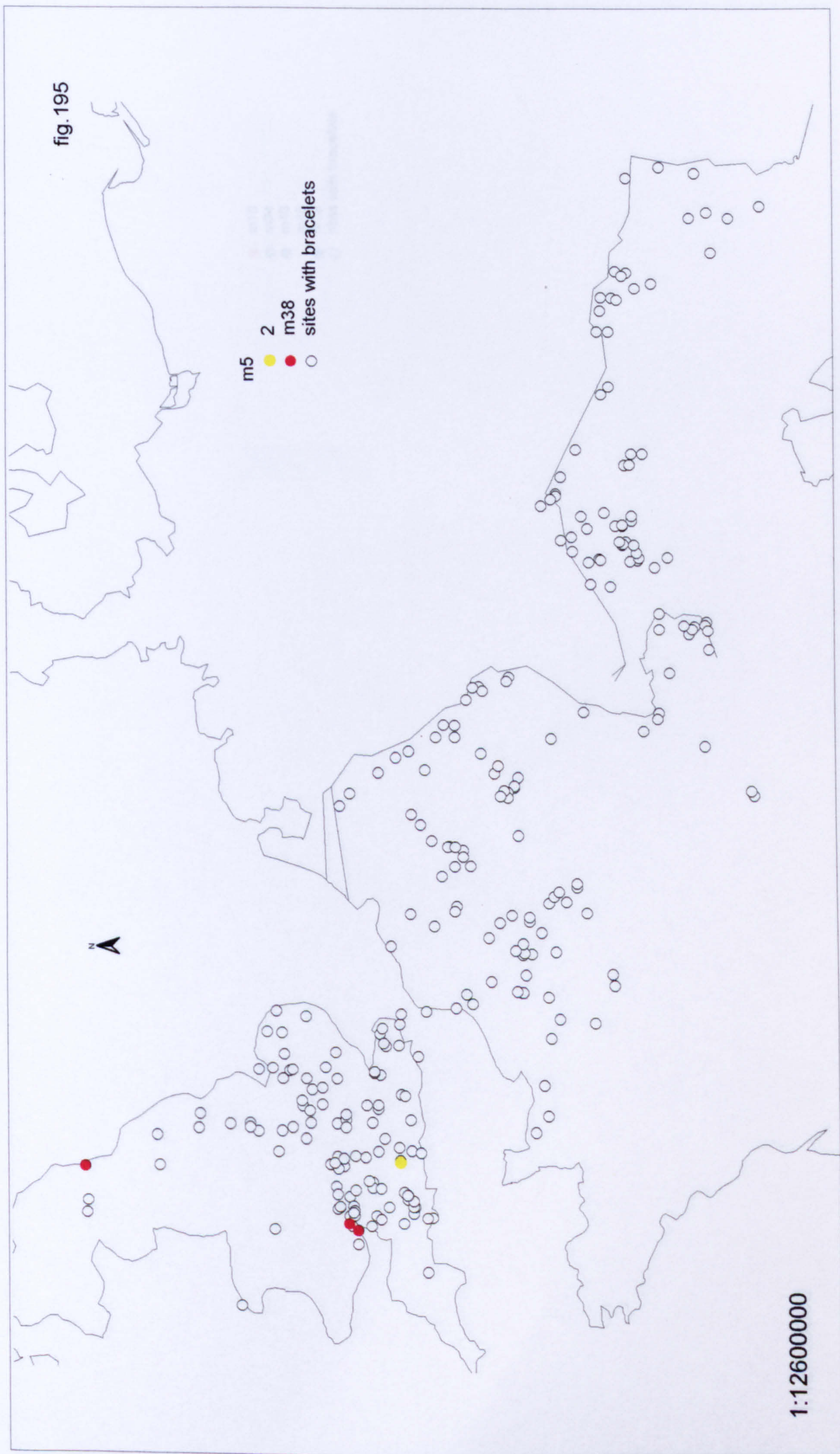


fig.195

1:12600000



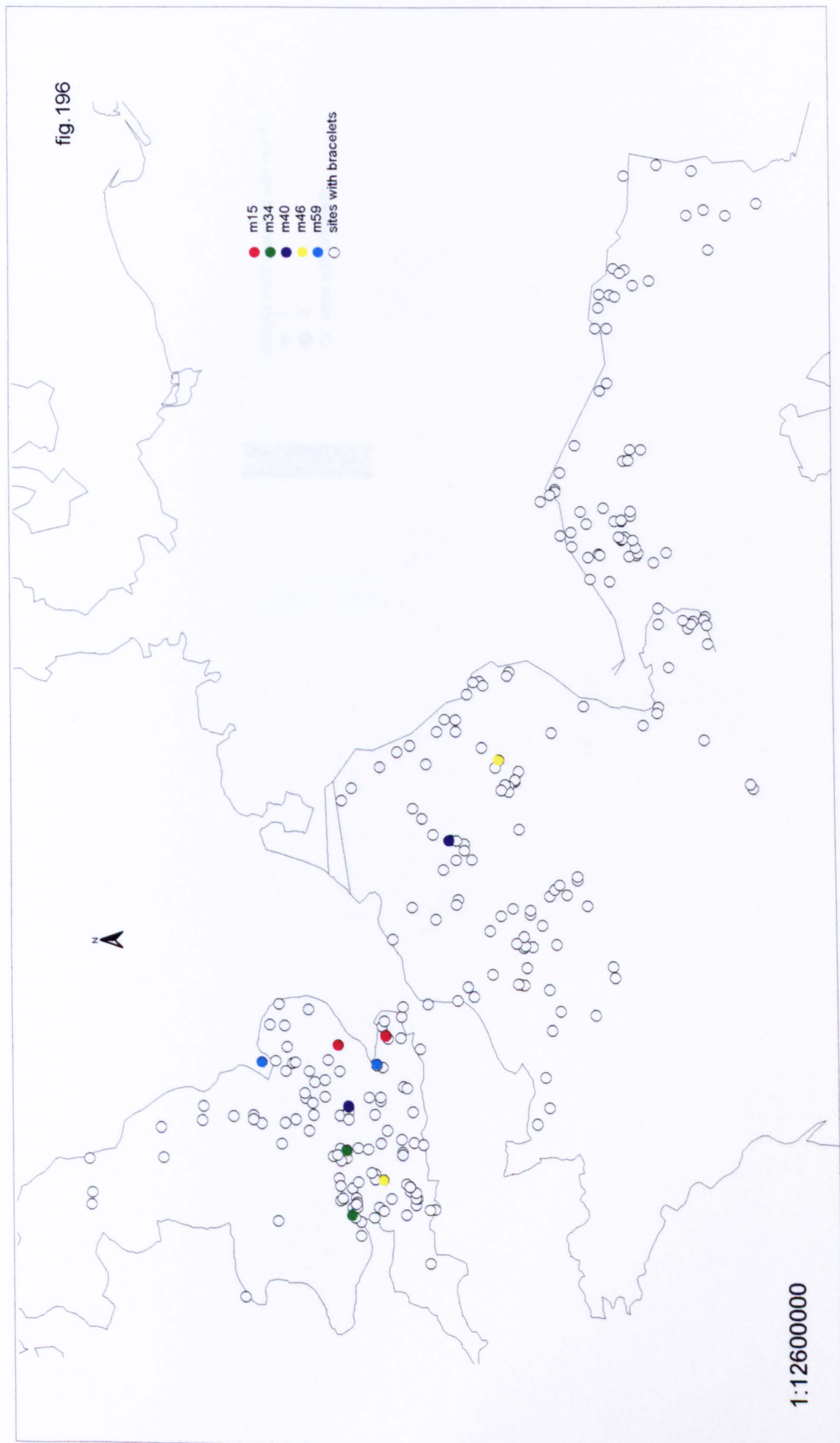


fig. 196



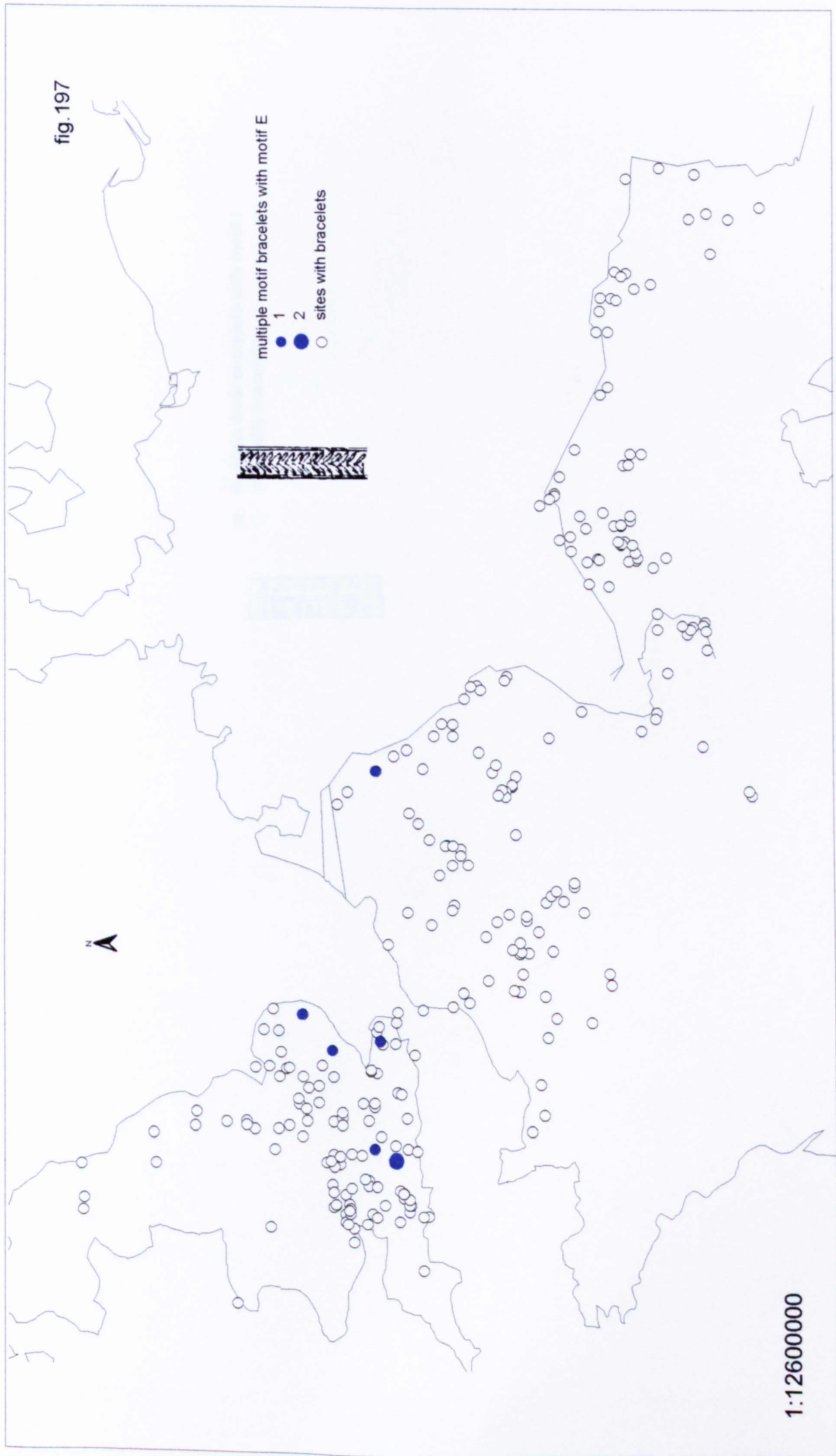
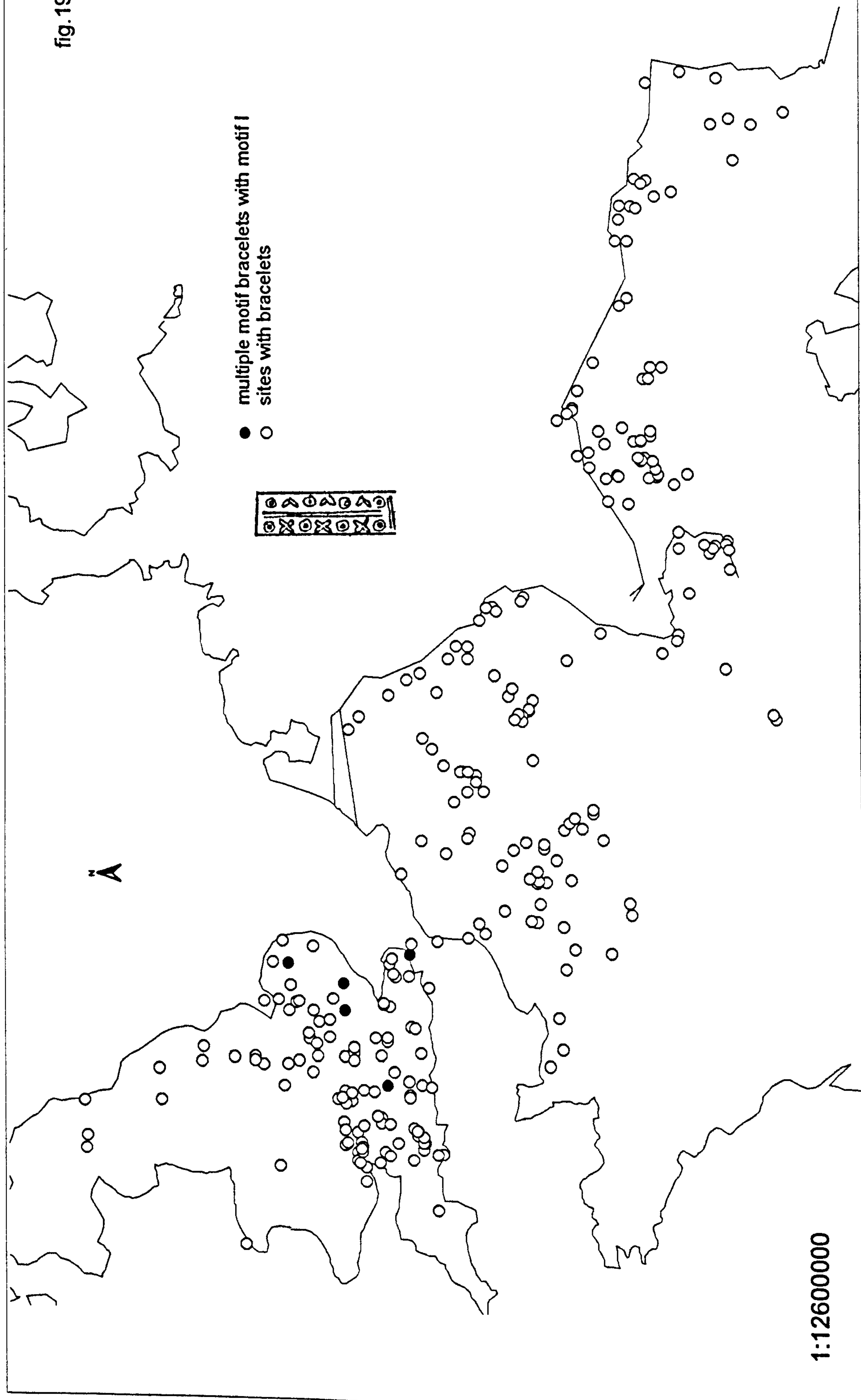
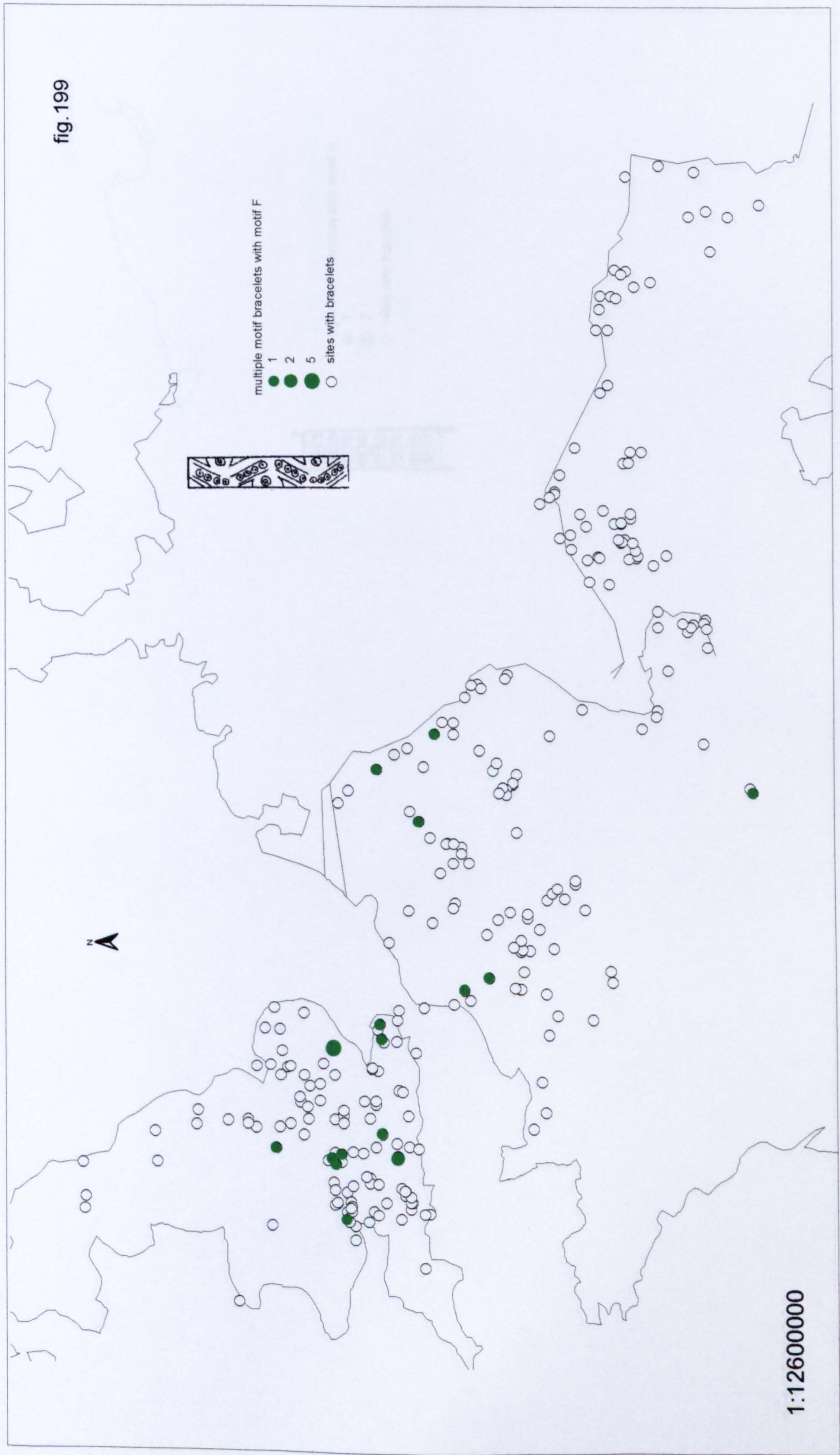




fig.198









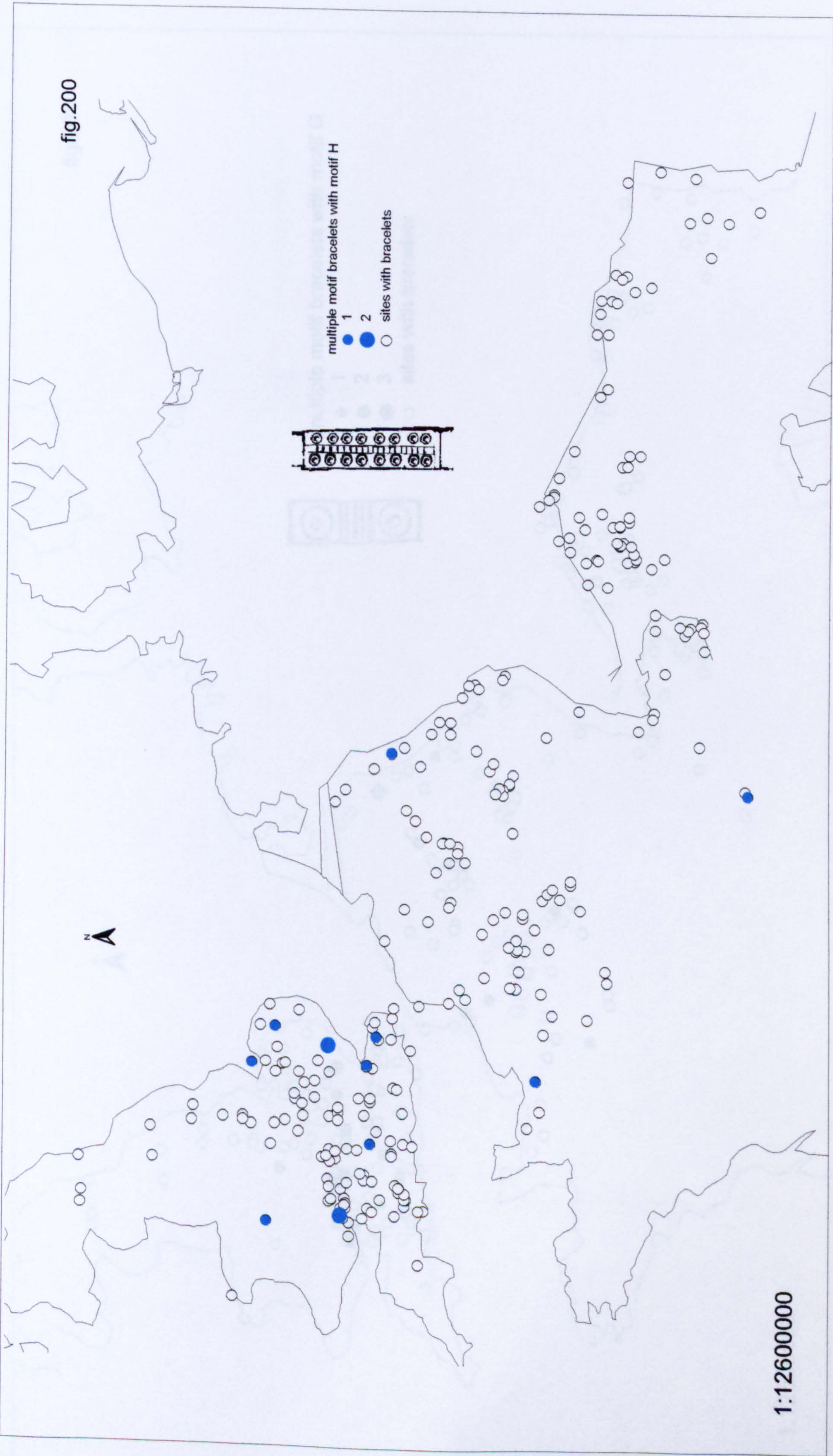


fig.200



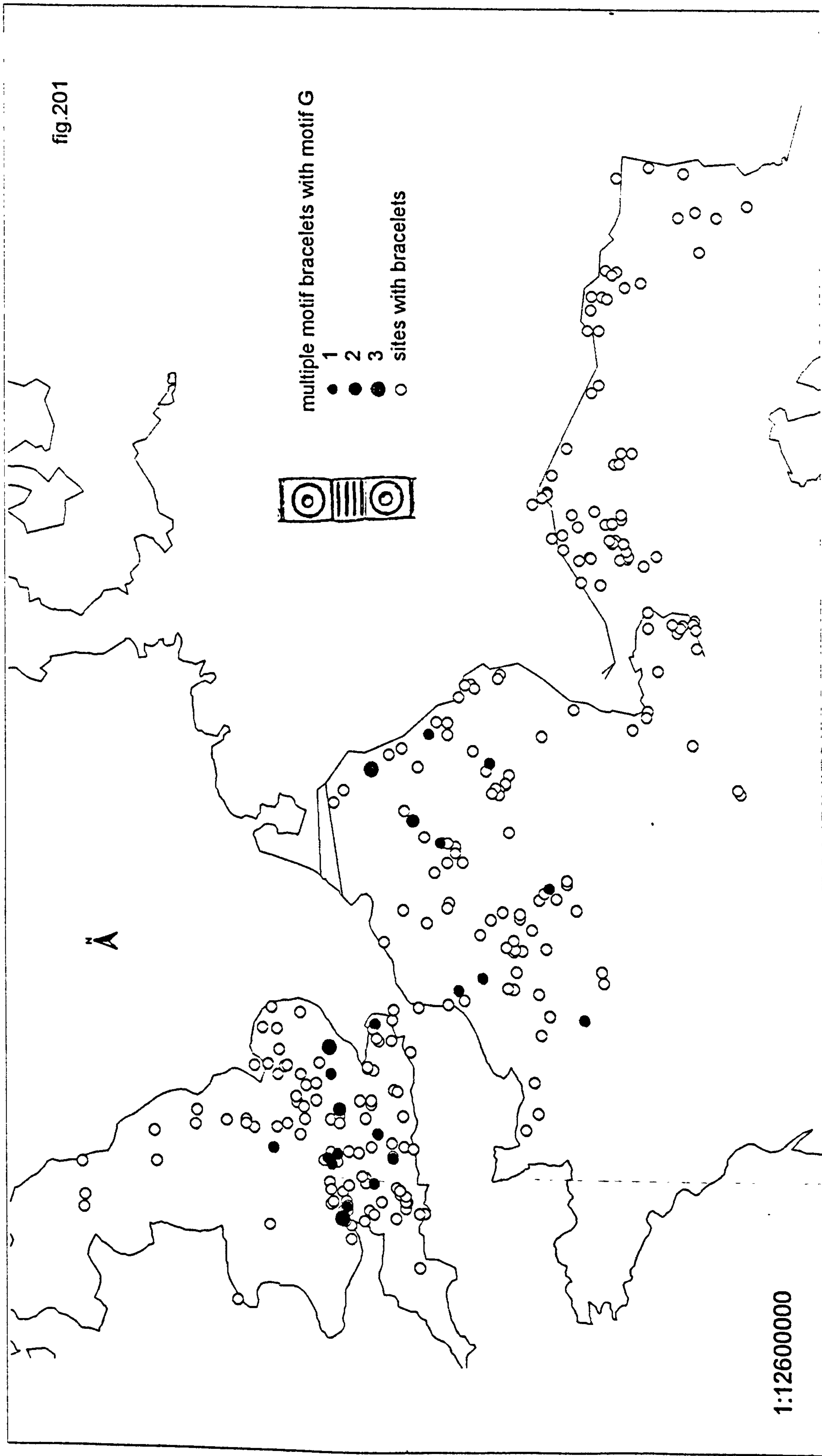


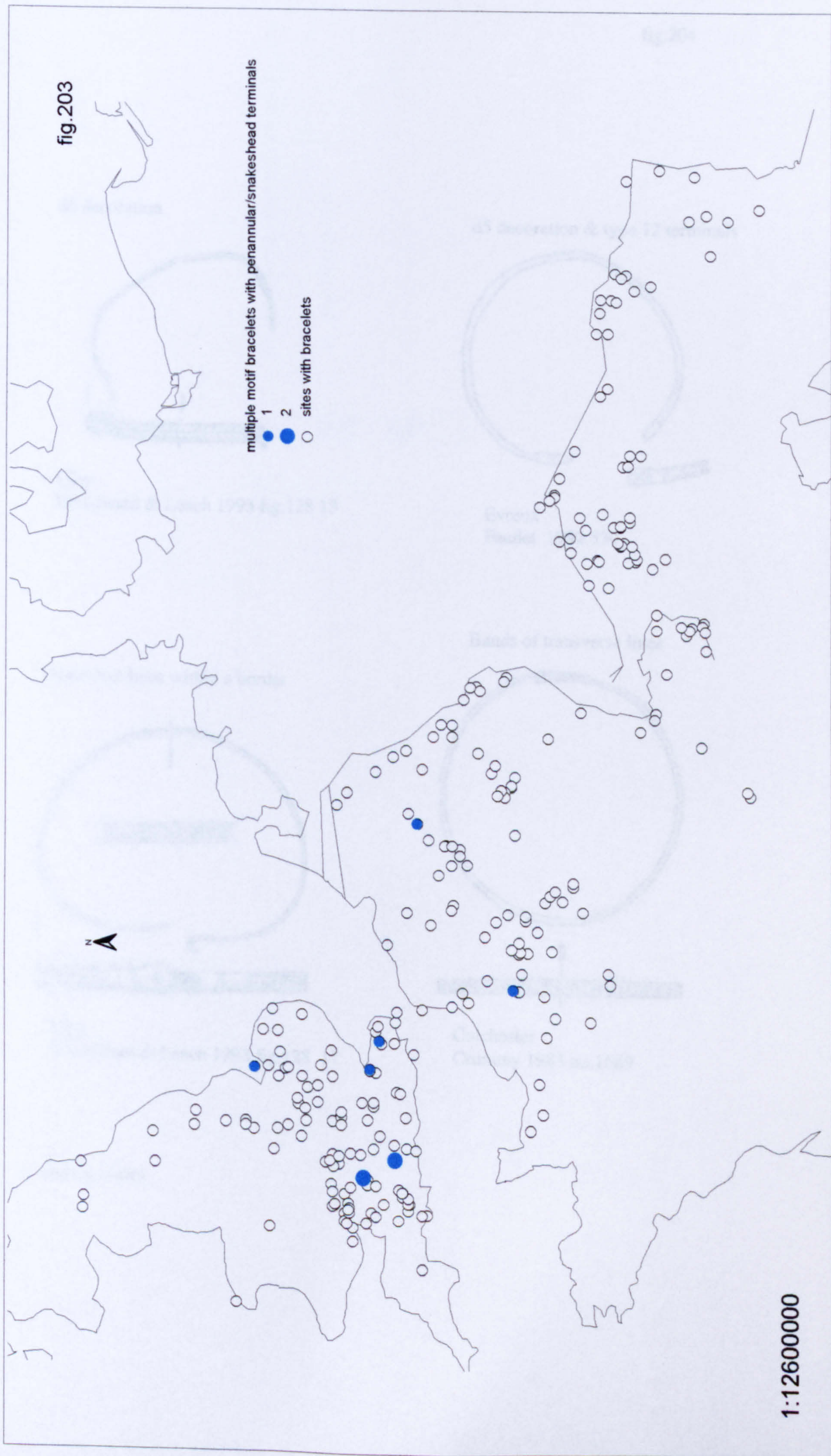
fig.201

1:12600000



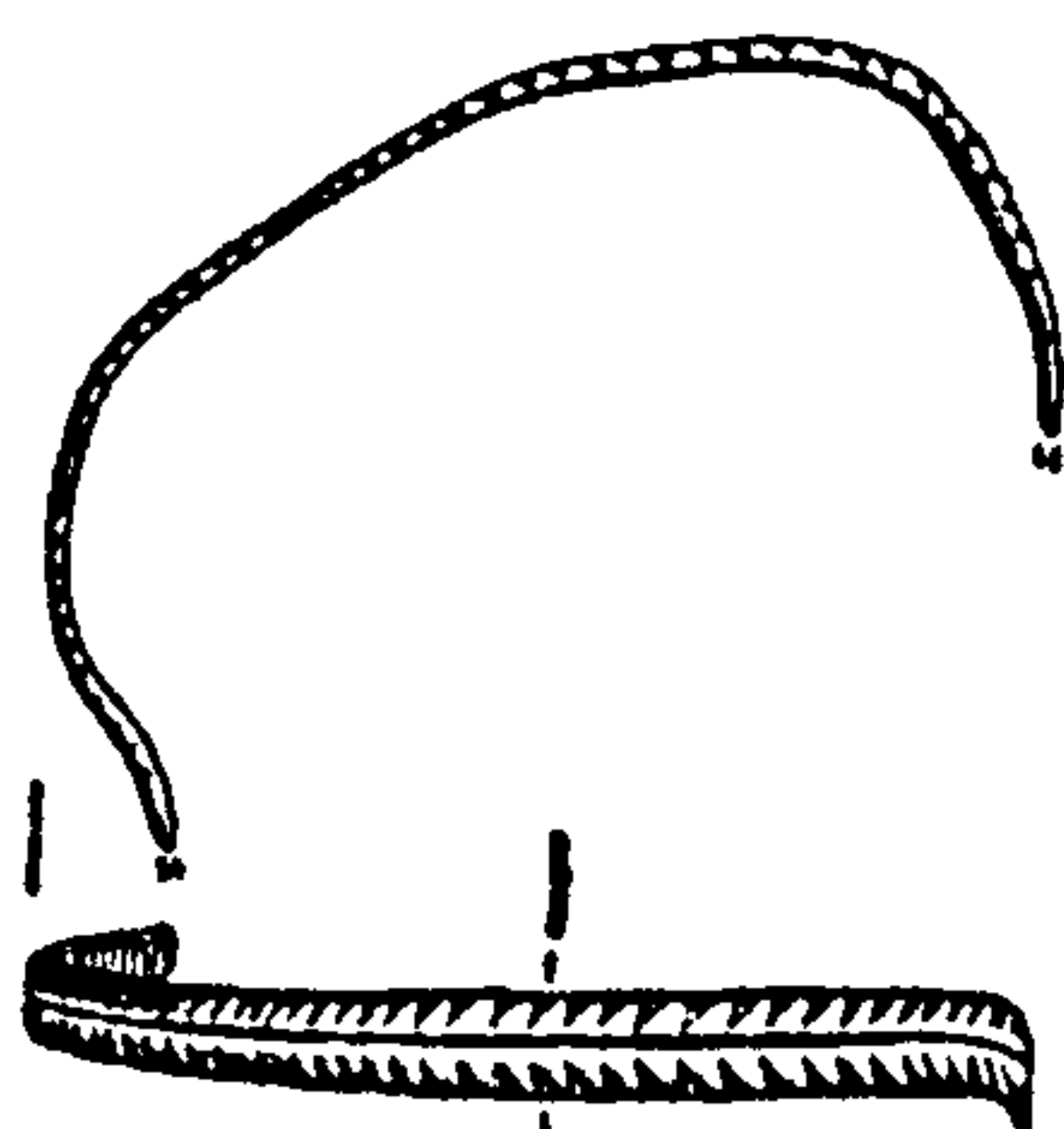






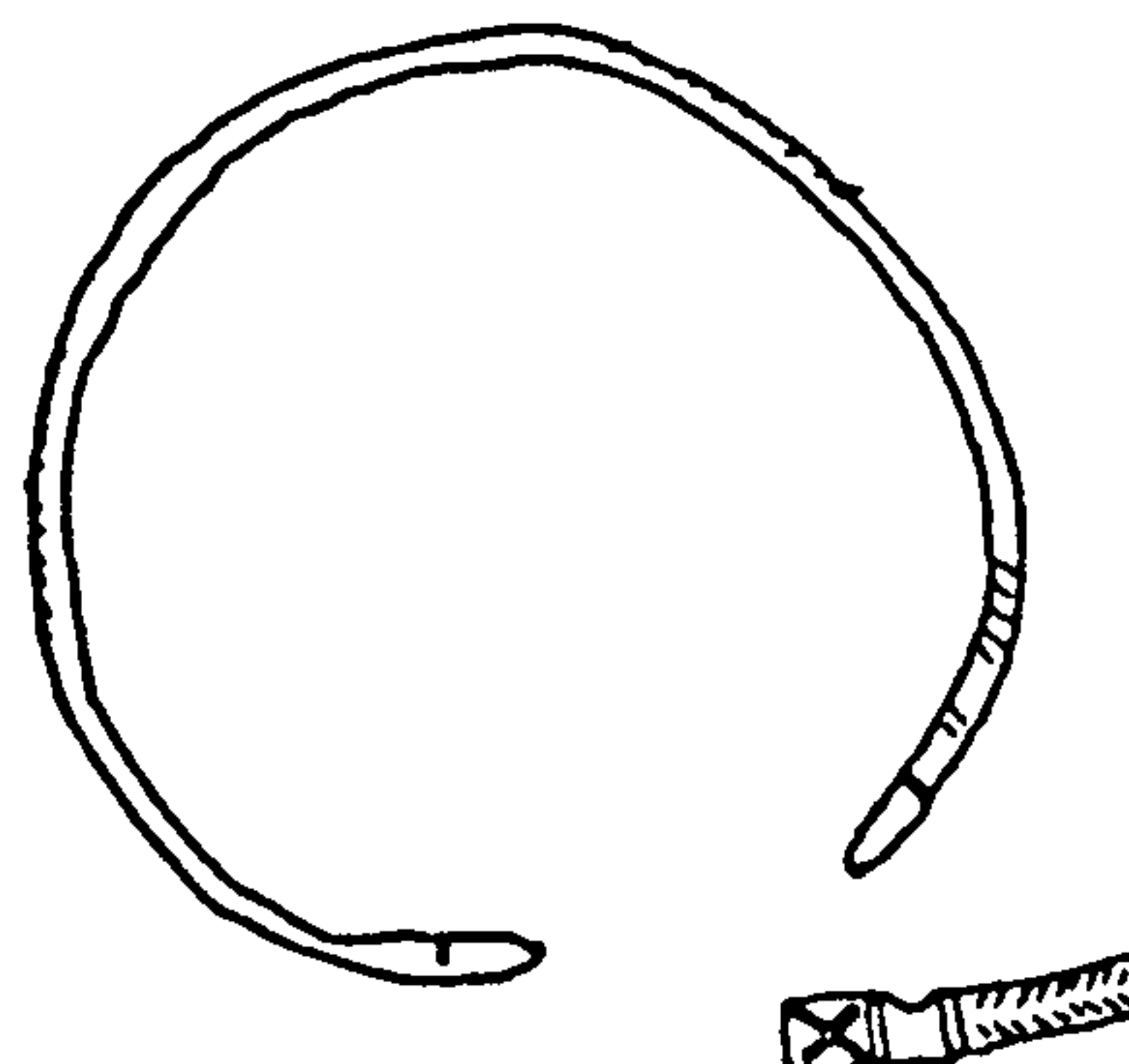


d6 decoration



Uley  
Woodward & Leach 1993 fig.128 13

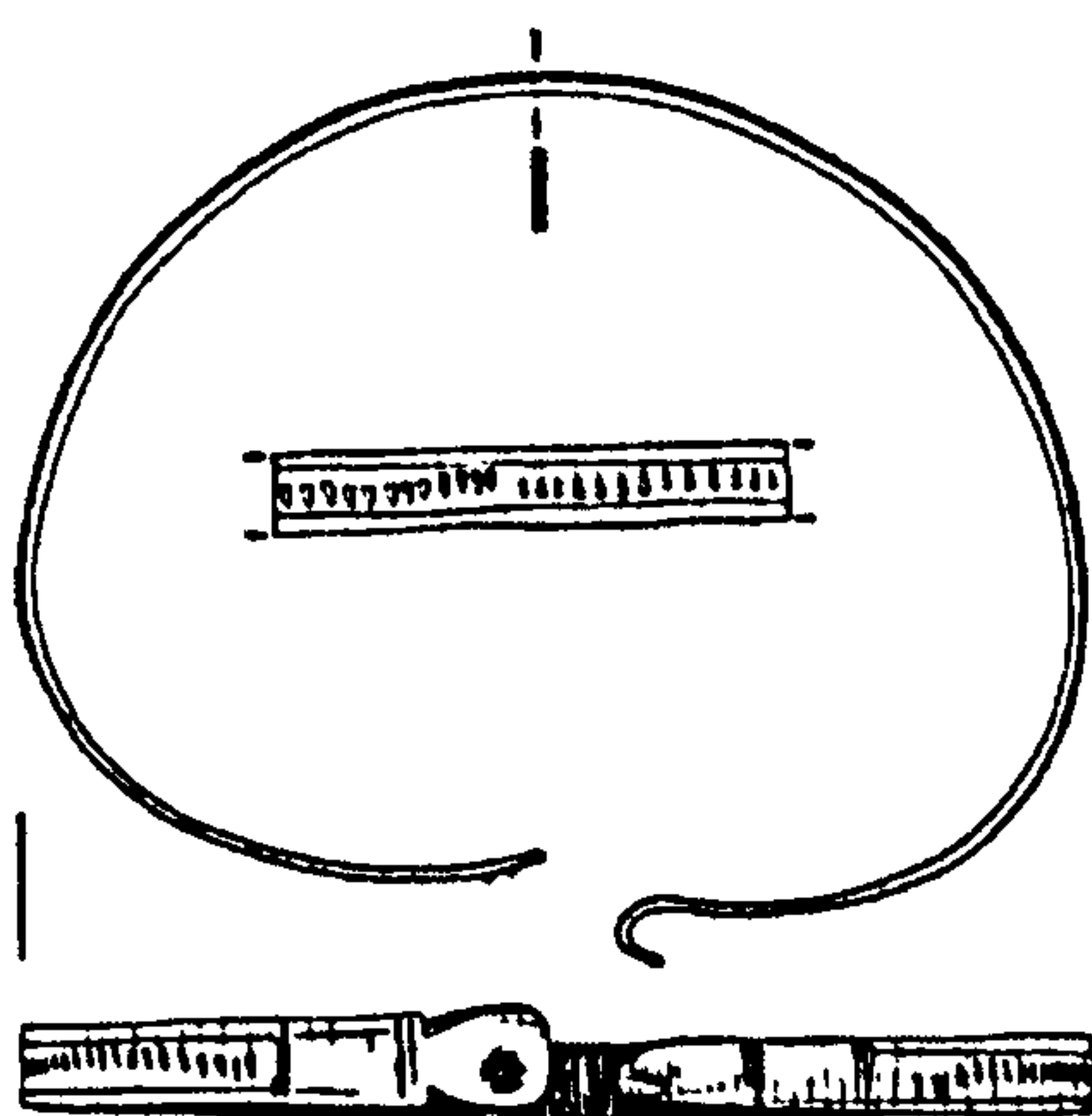
d5 decoration & type 12 terminals



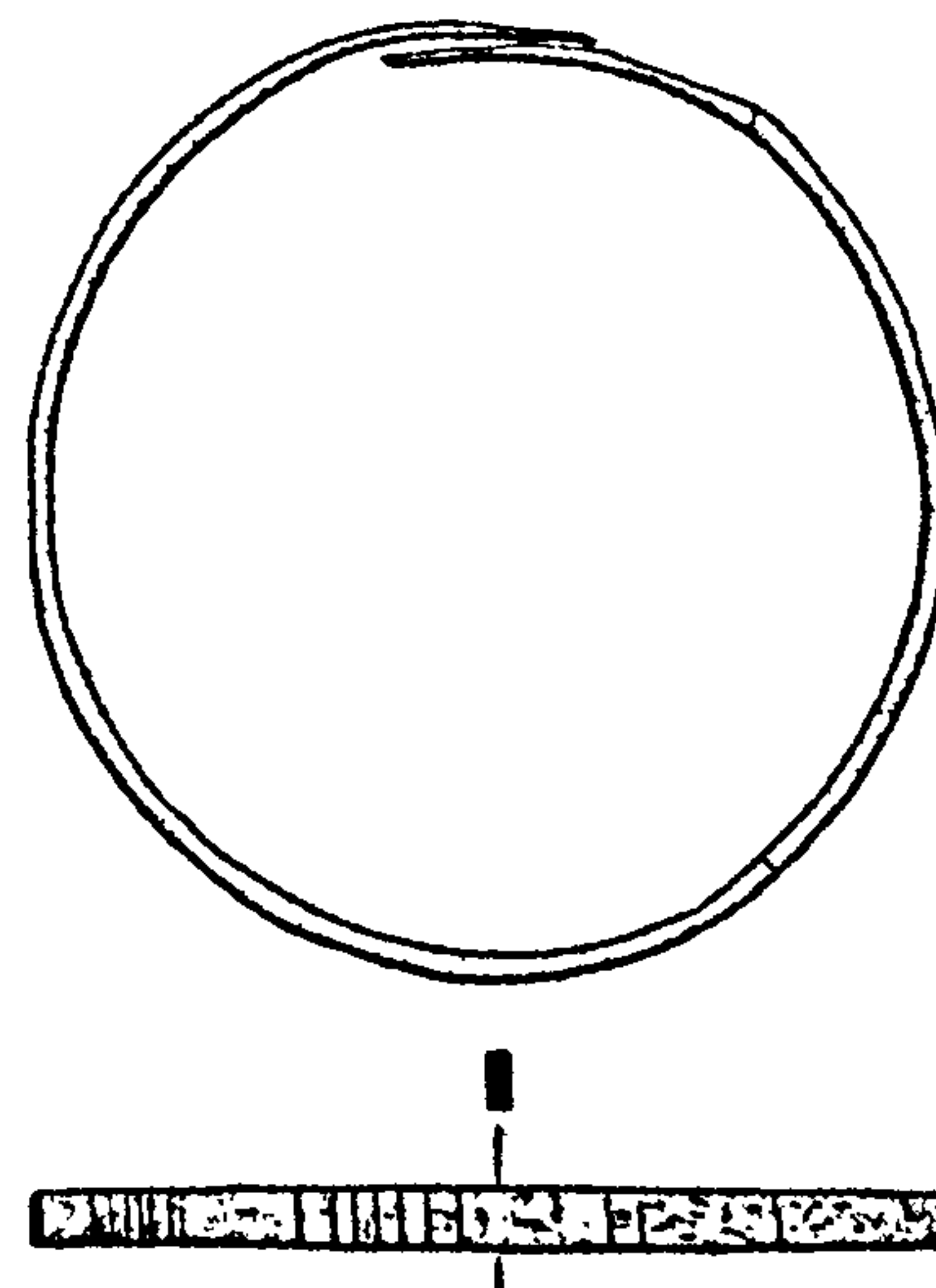
Evreux  
Faudet 1992 530

Bands of transverse lines

Transverse lines within a border



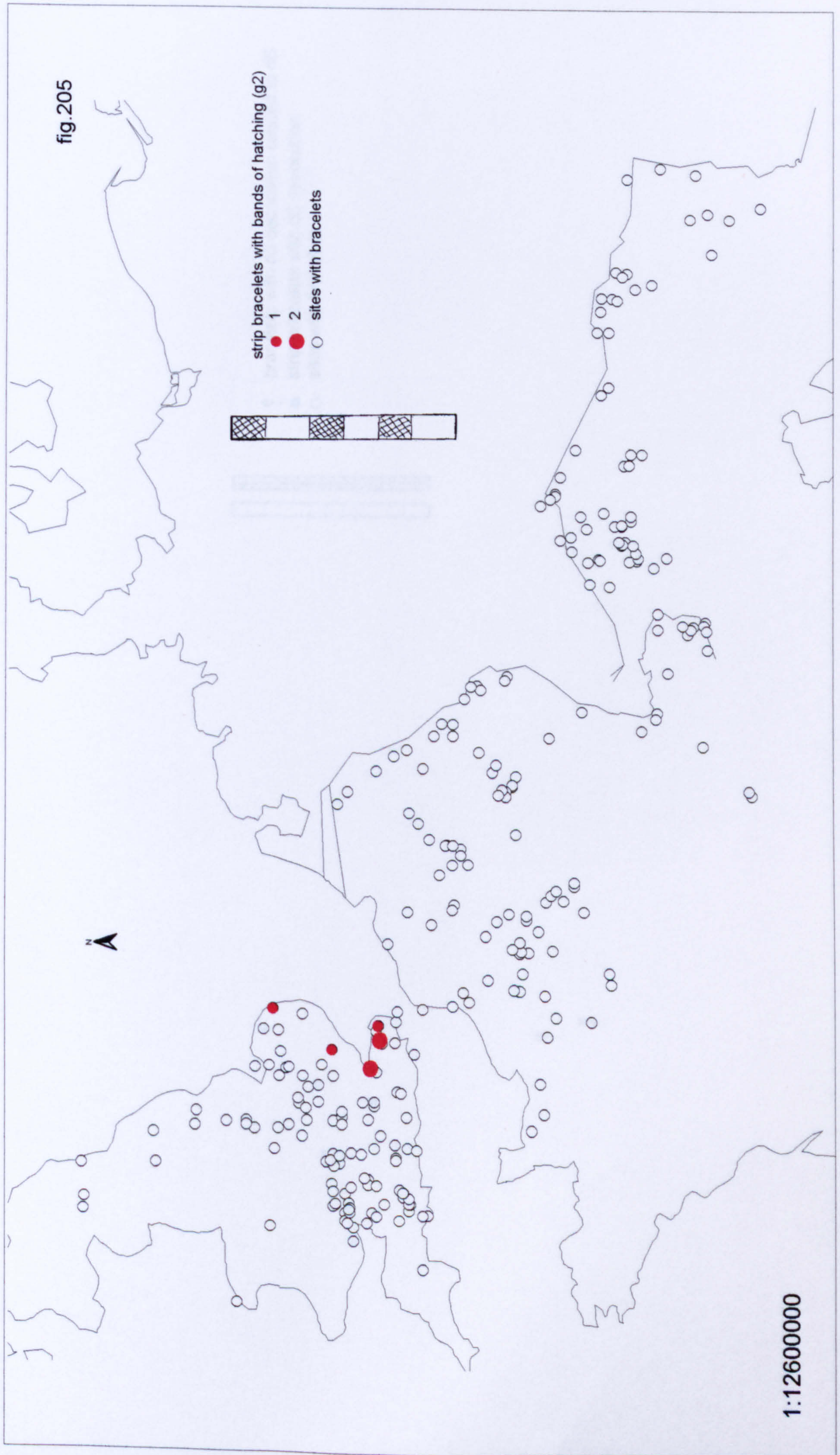
Uley  
Woodward & Leach 1993 fig.128 17



Colchester  
Crummy 1983 no.1689

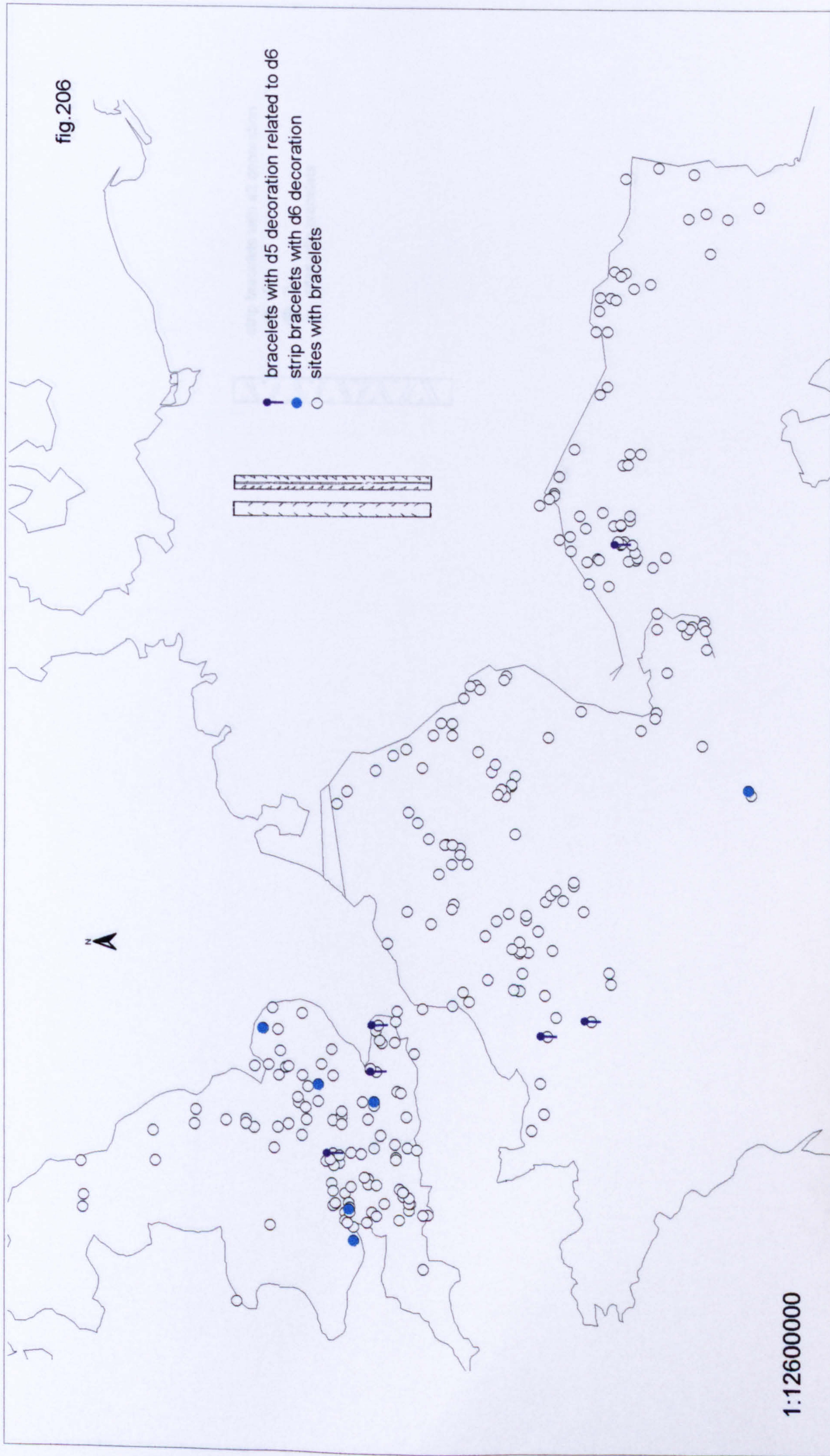
at varying scales





1:12600000







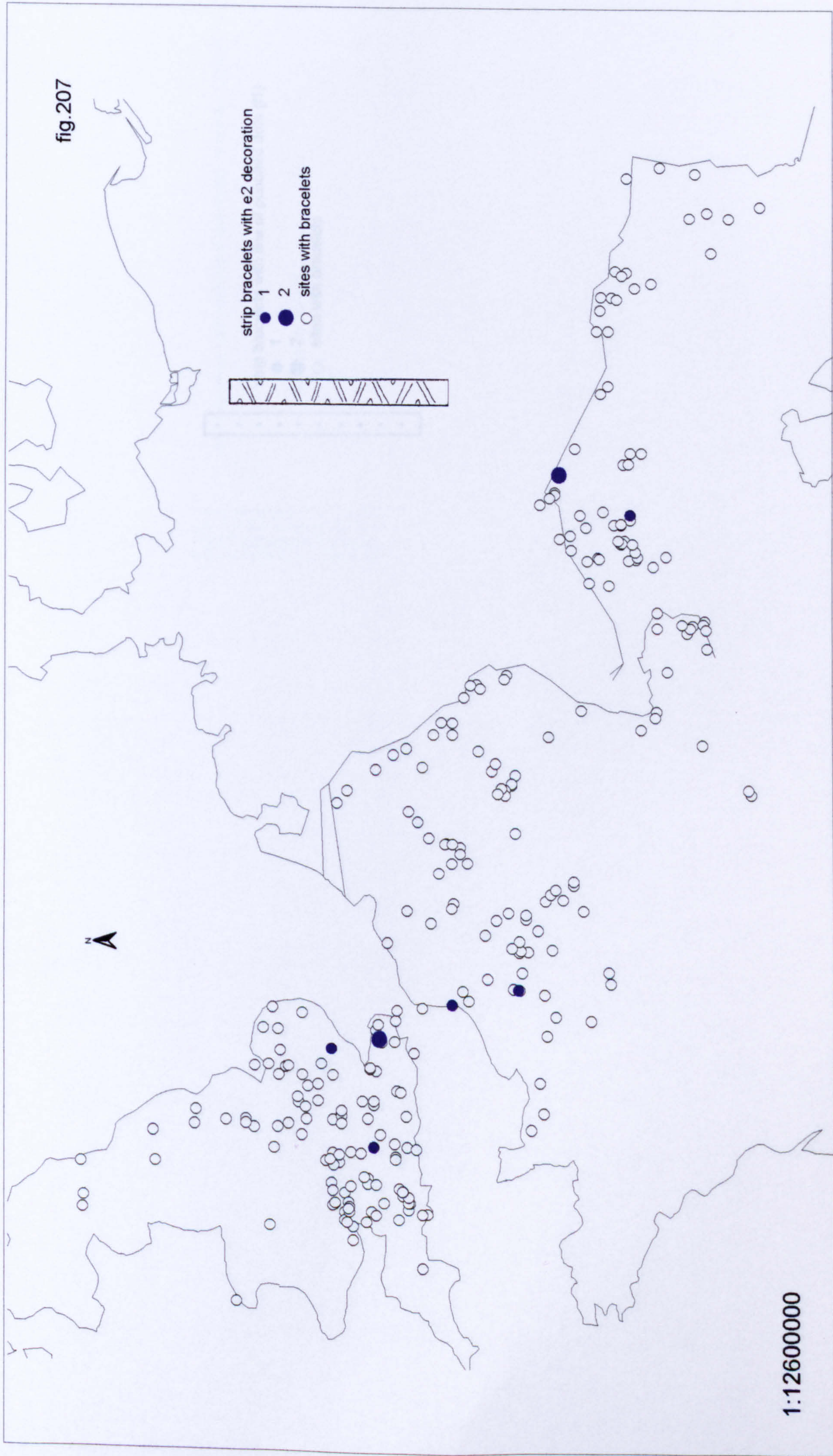
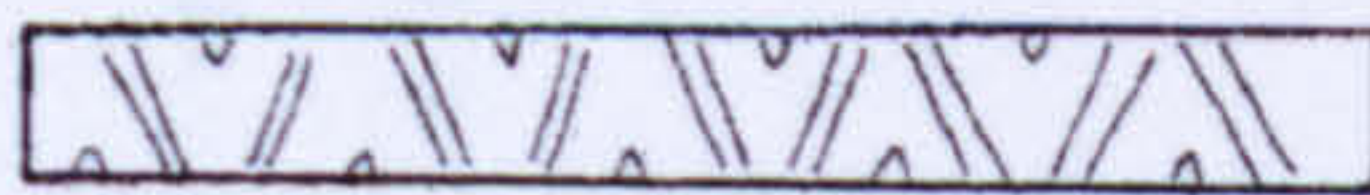


fig.207

strip bracelets with e2 decoration  
1 2 sites with bracelets



1:12600000



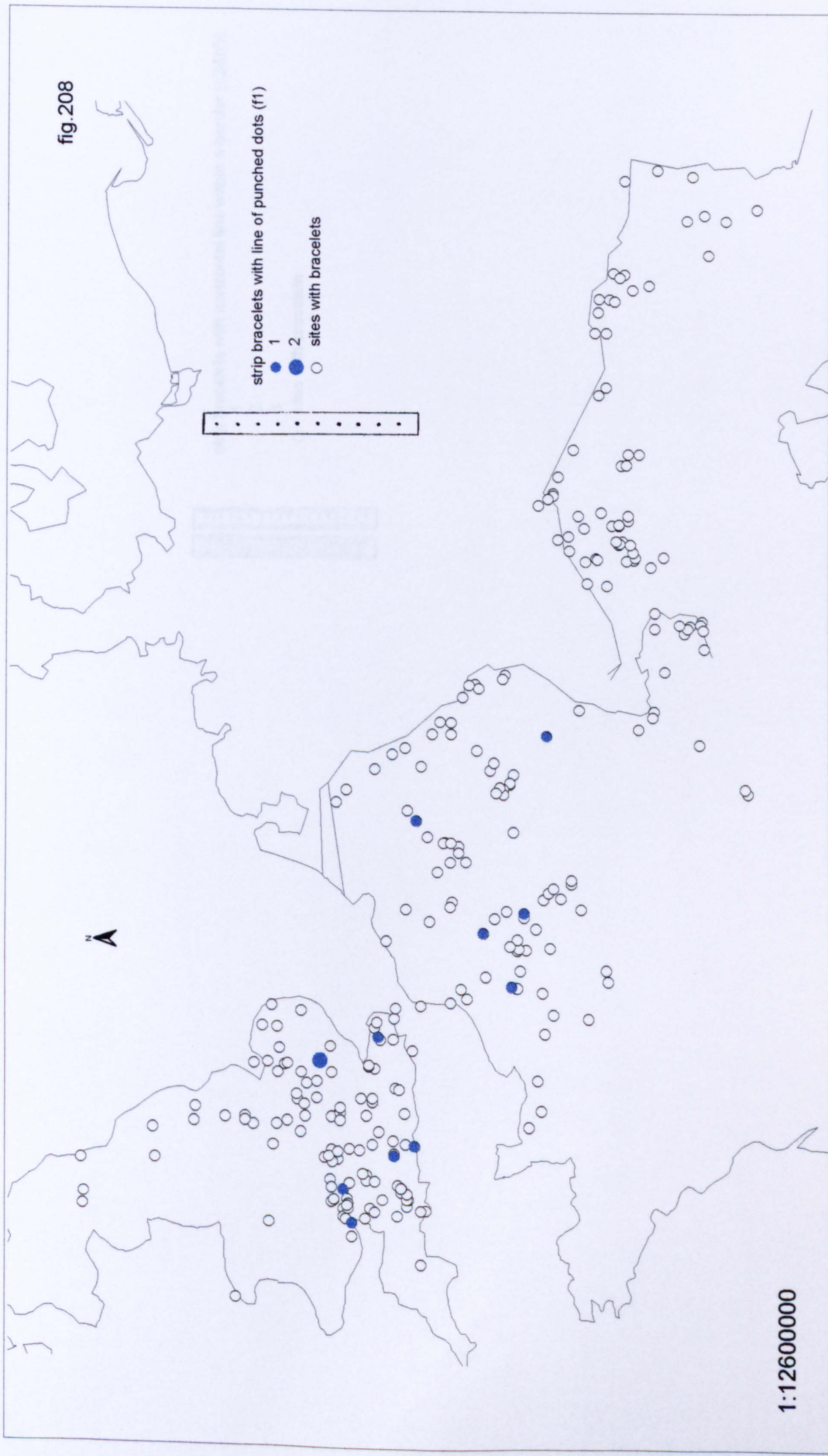


fig.208



strip bracelets with line of punched dots (f1)

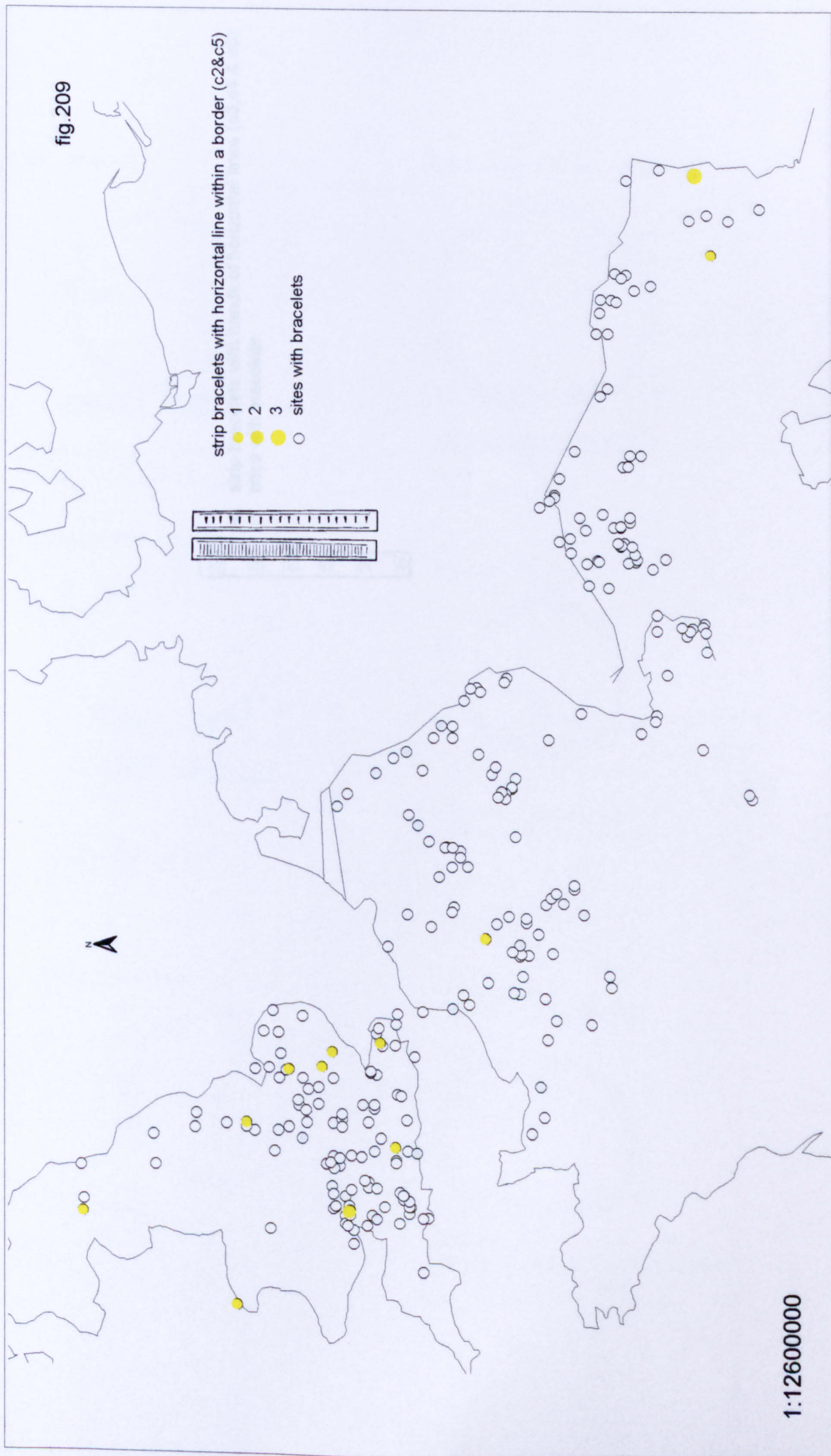
1

2

○ sites with bracelets

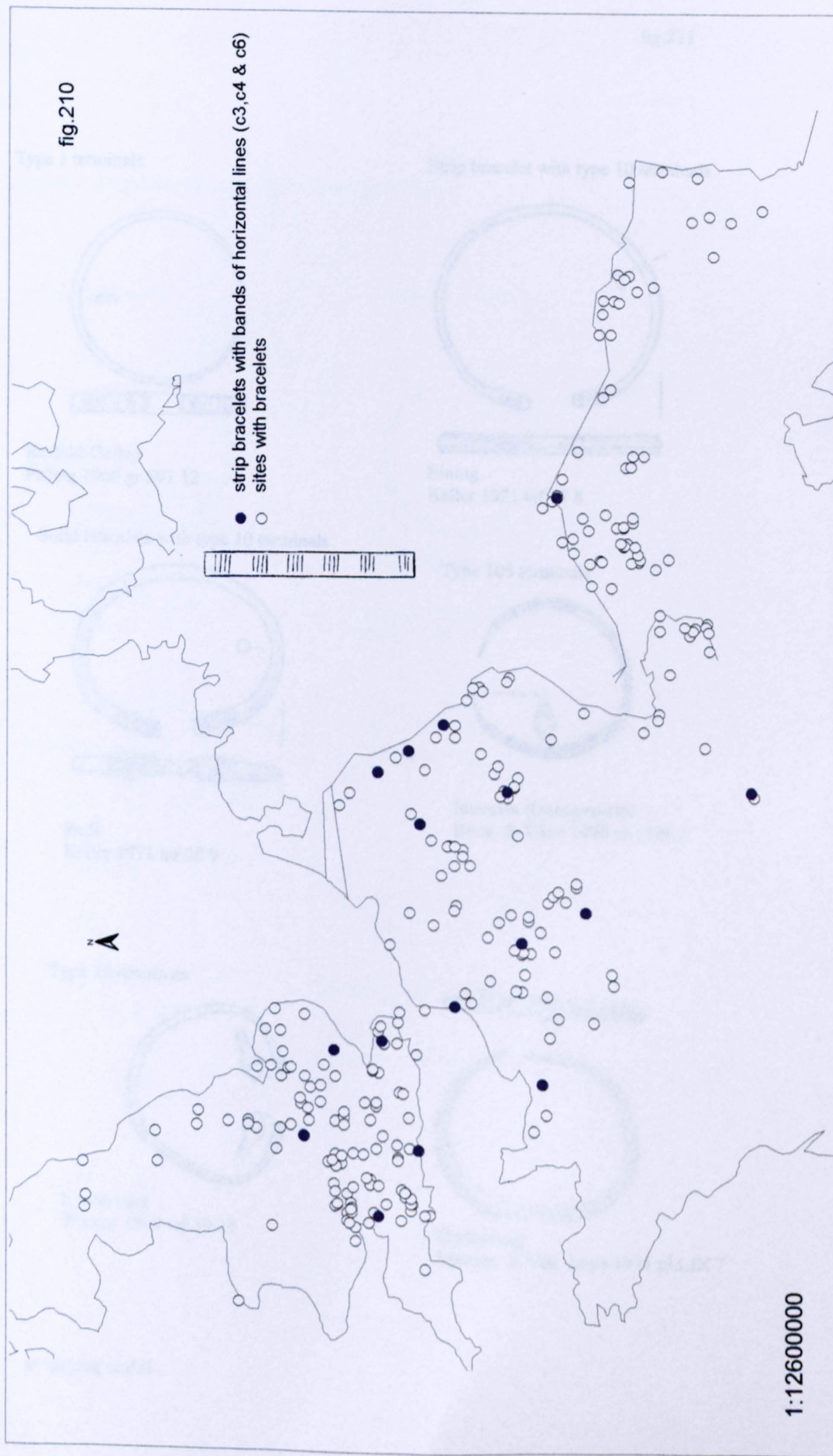
1:12600000





1:12600000

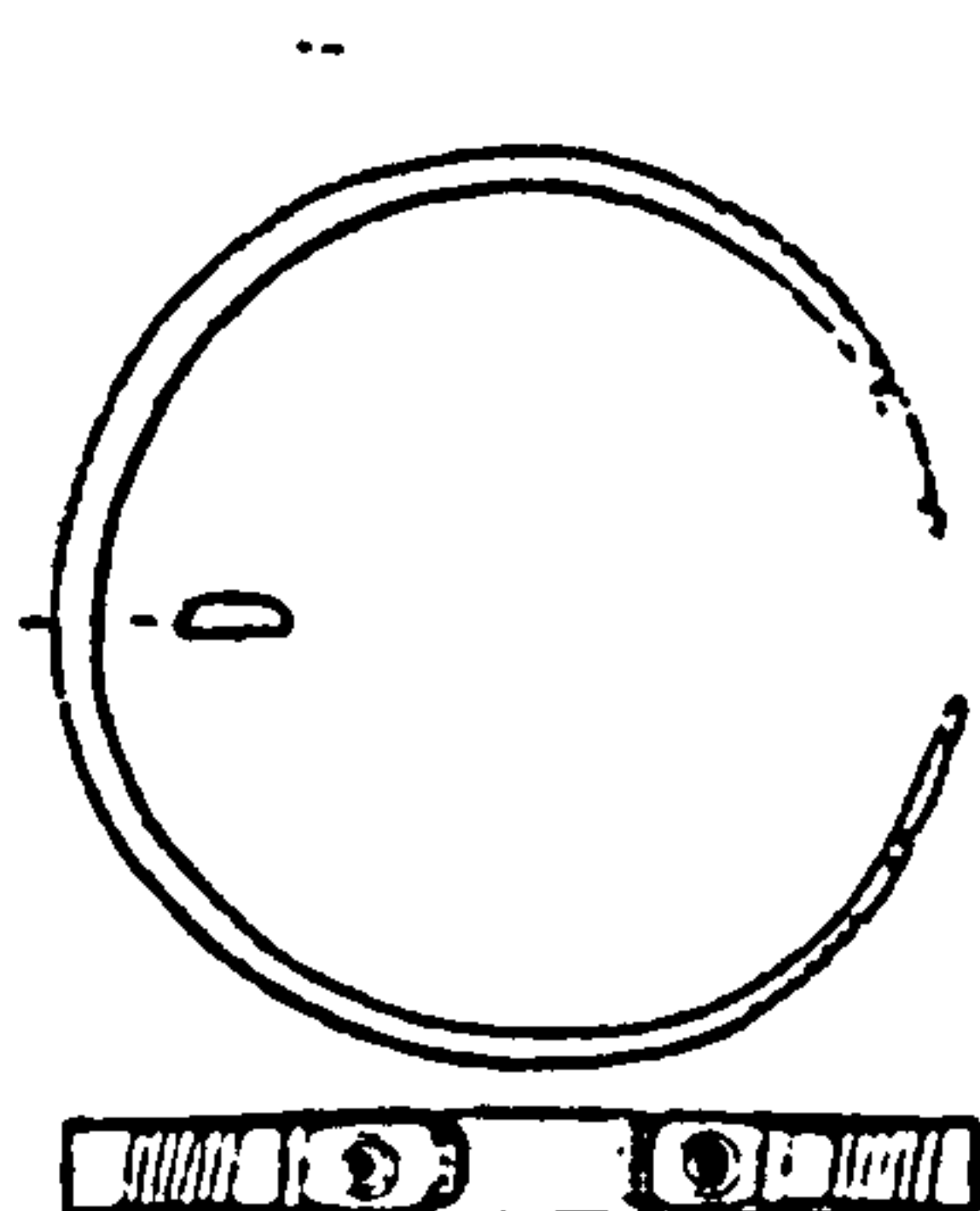




1:12600000

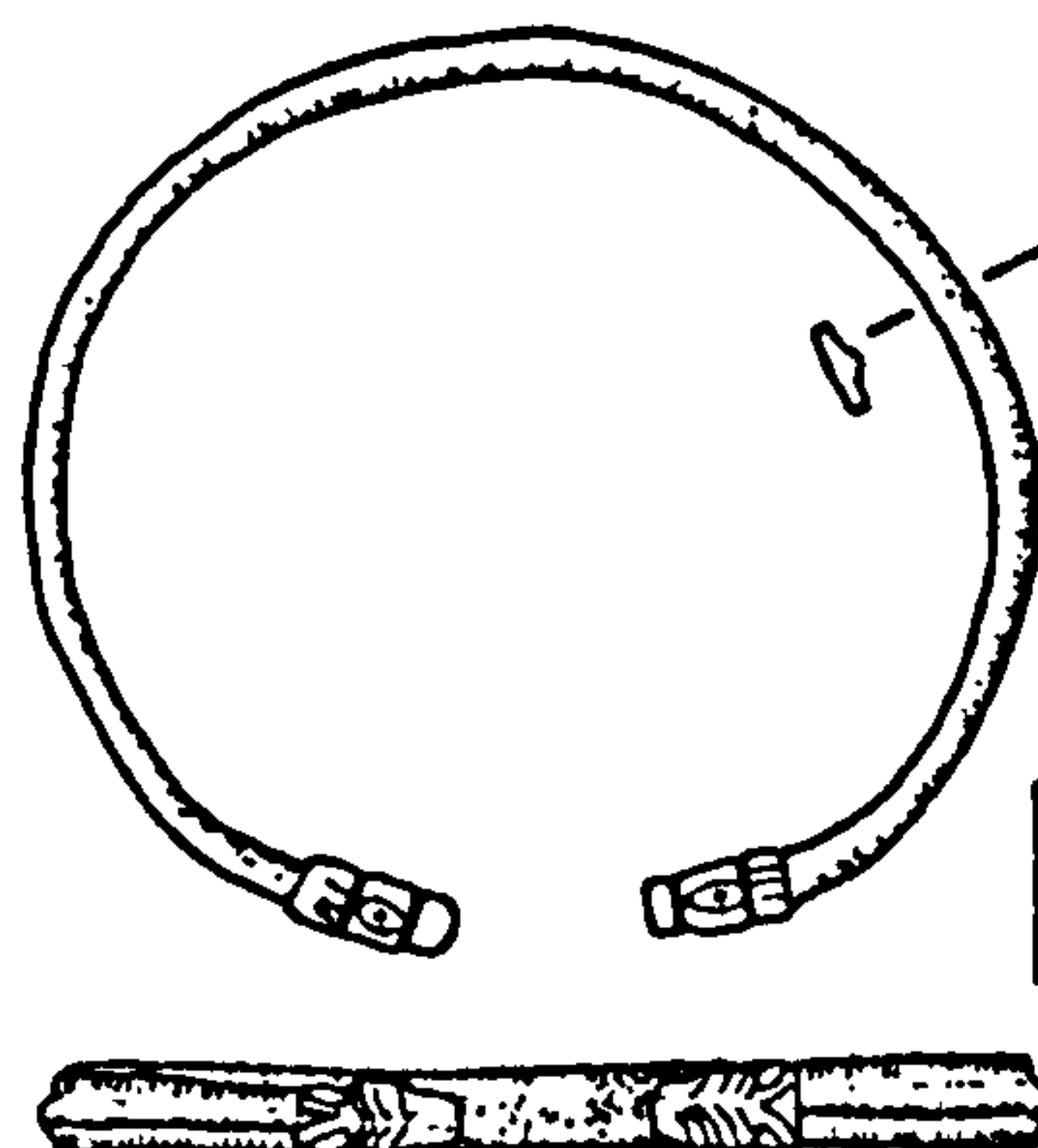


Type 1 terminals



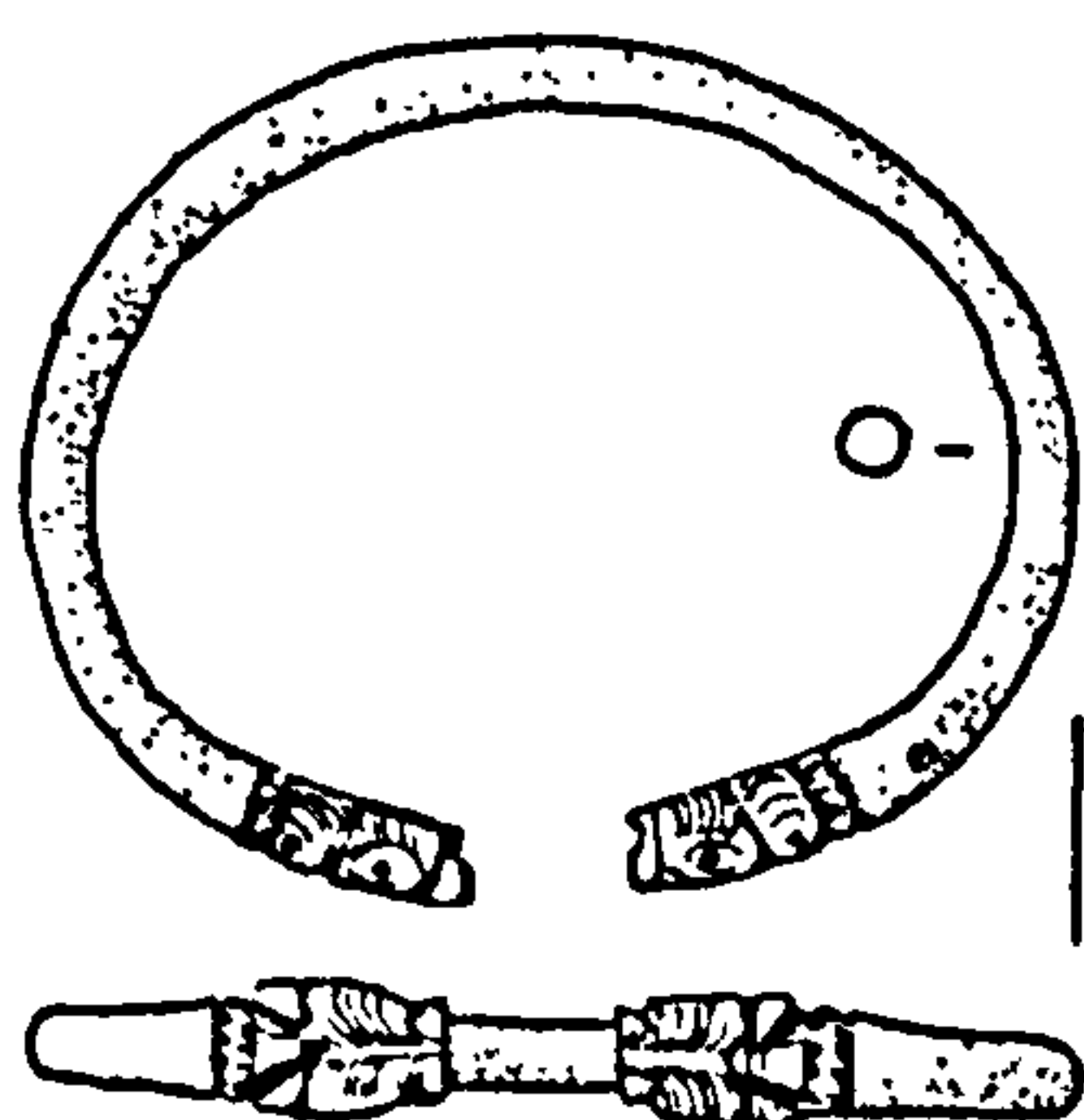
Krefeld-Gellep  
Pirling 1966 gr.597 12

Strip bracelet with type 10 terminals



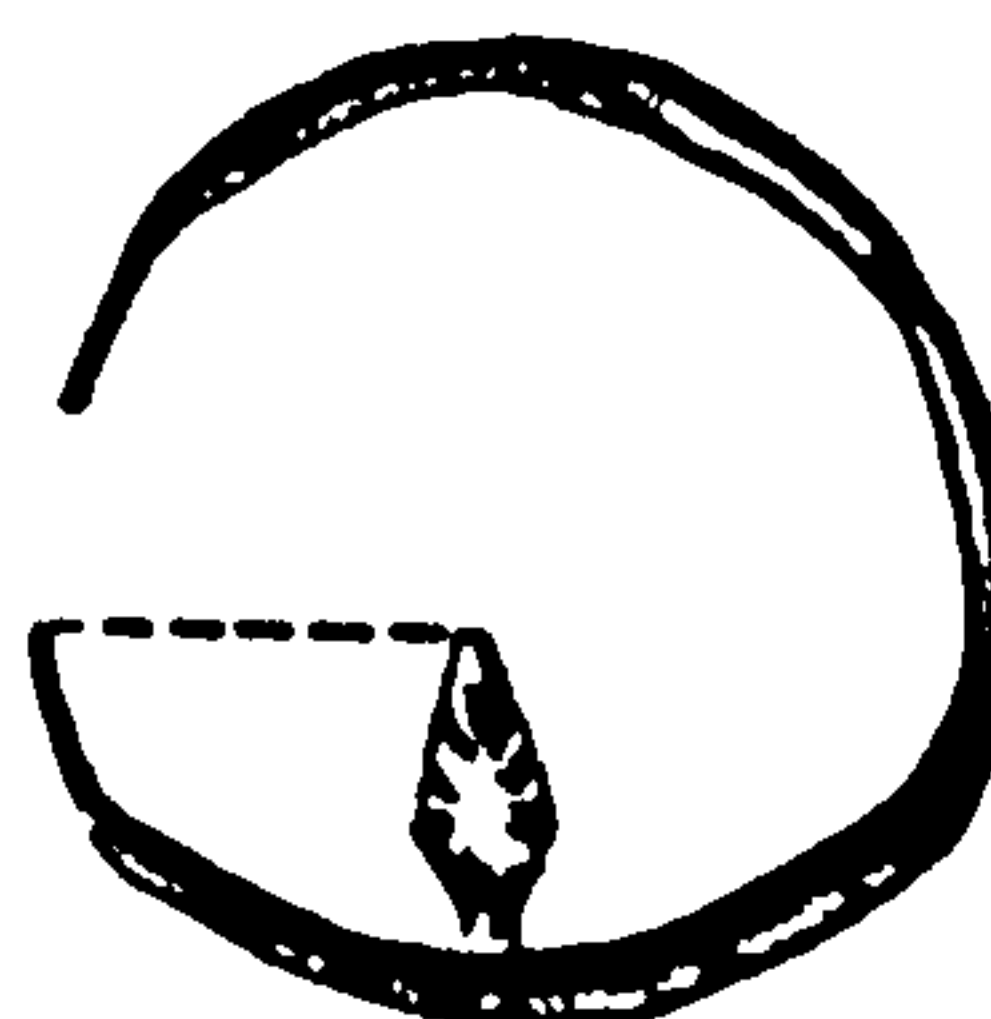
Eining  
Keller 1971 taf 47 8

Solid bracelets with type 10 terminals



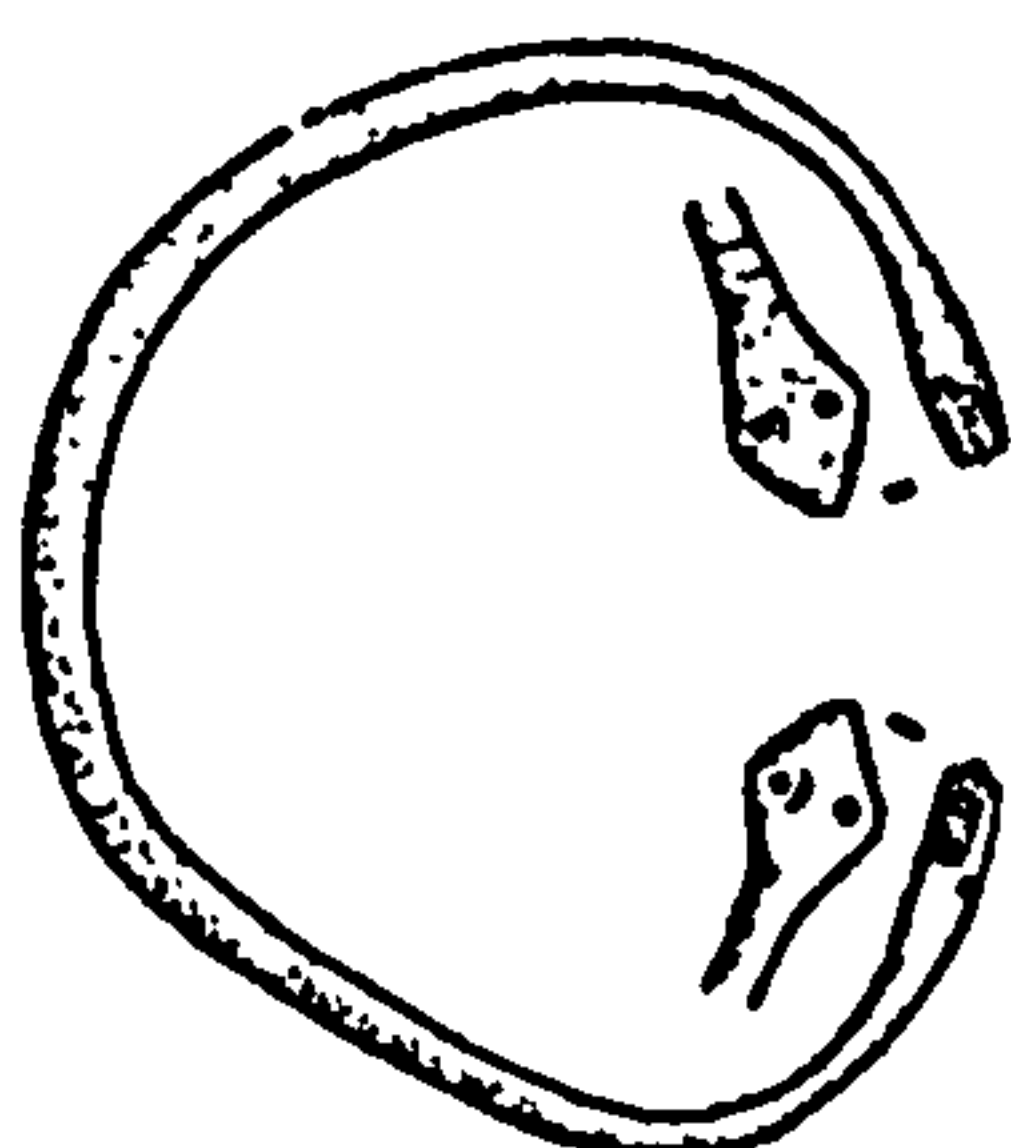
Redl  
Keller 1971 taf.20 9

Type 105 terminals



Intercisa (Dunapentele)  
Bóna & Vágo 1976 gr.1186 3

Type 28 terminals



Lorenzberg  
Werner 1969 taf.39 19



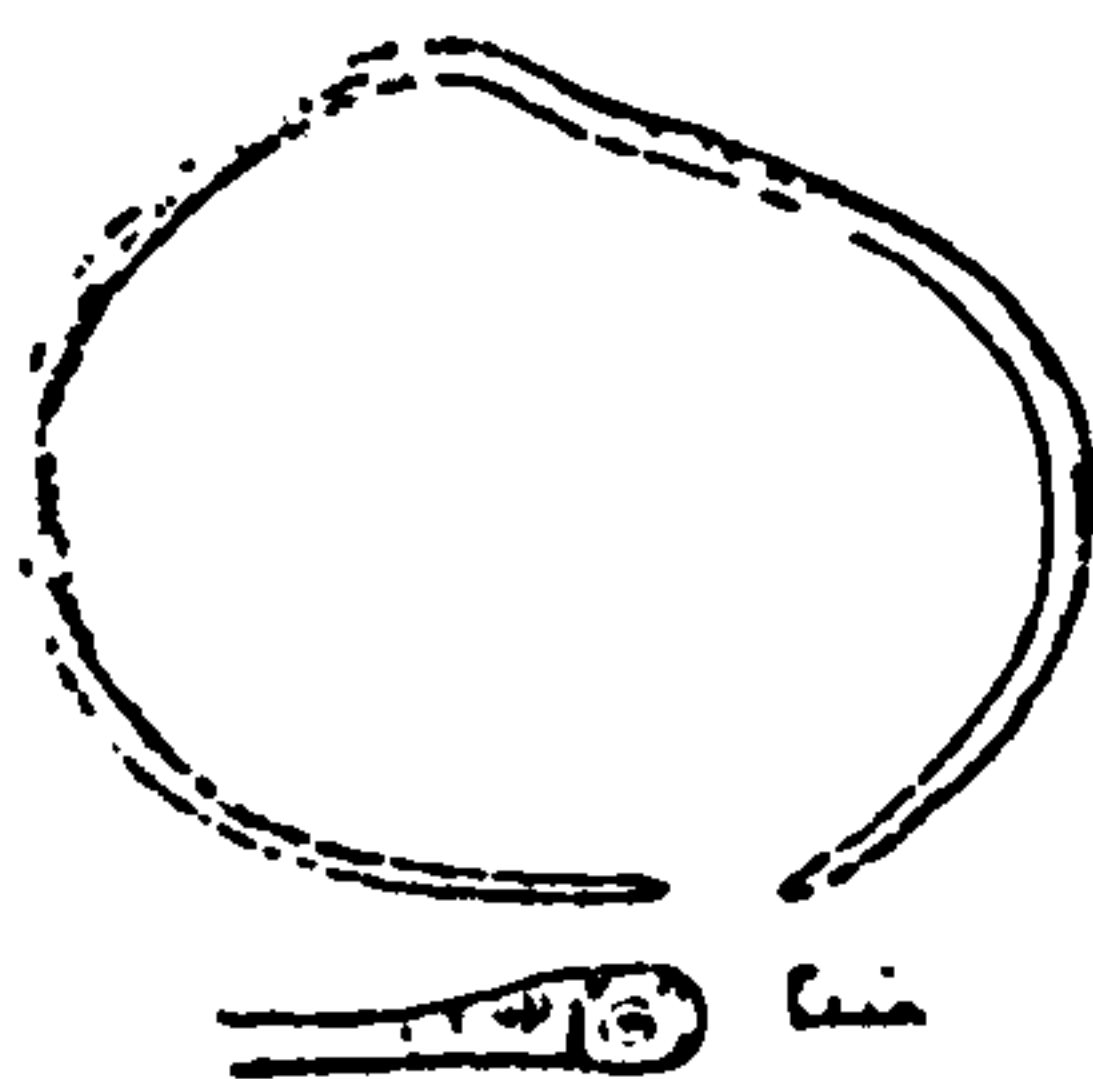
Oudenburg  
Mertens & Van Impe 1971 pl.LIX 7

at varying scales



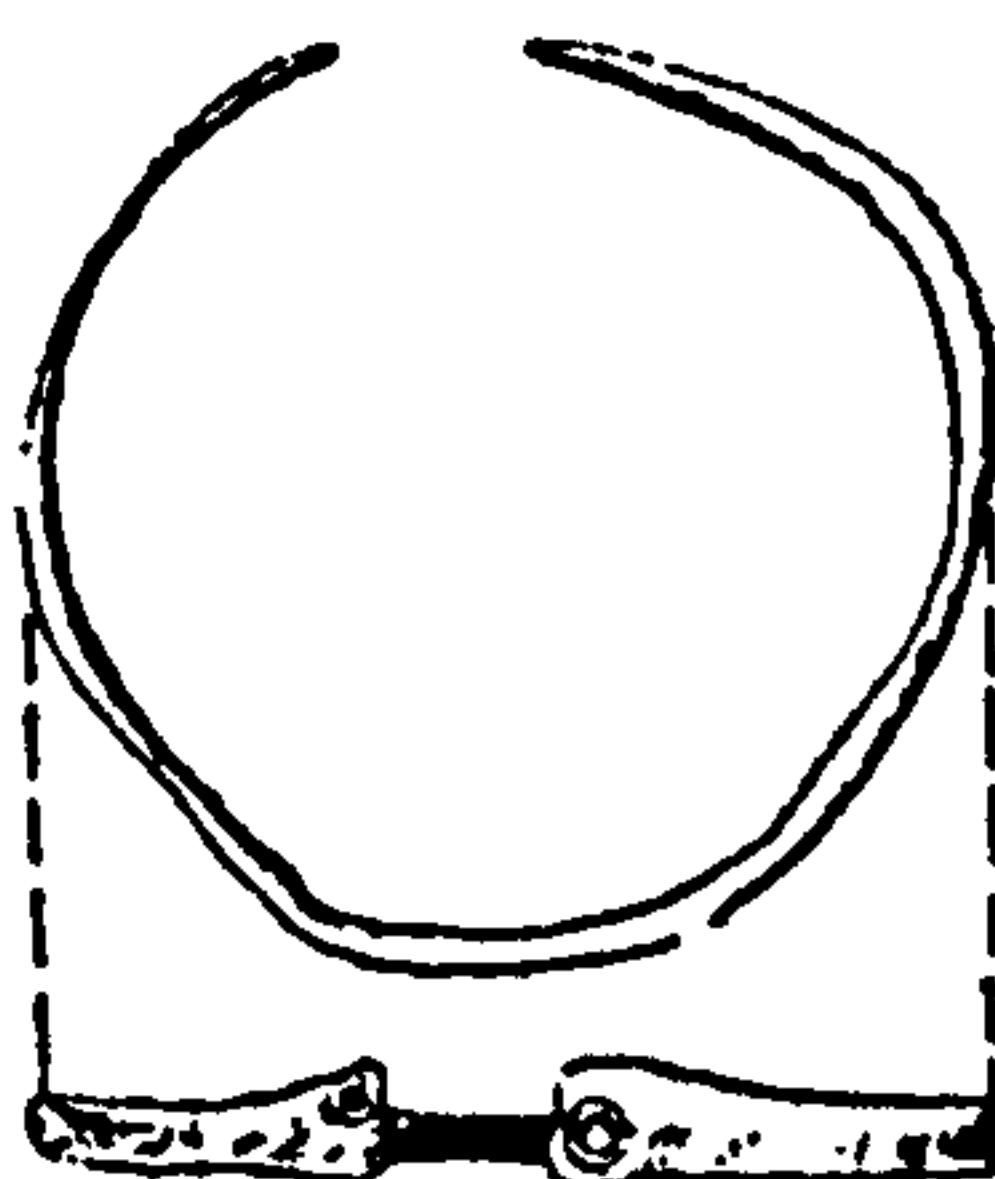
Snakeshead bracelets with type 23 and related terminals

Type 23 terminals



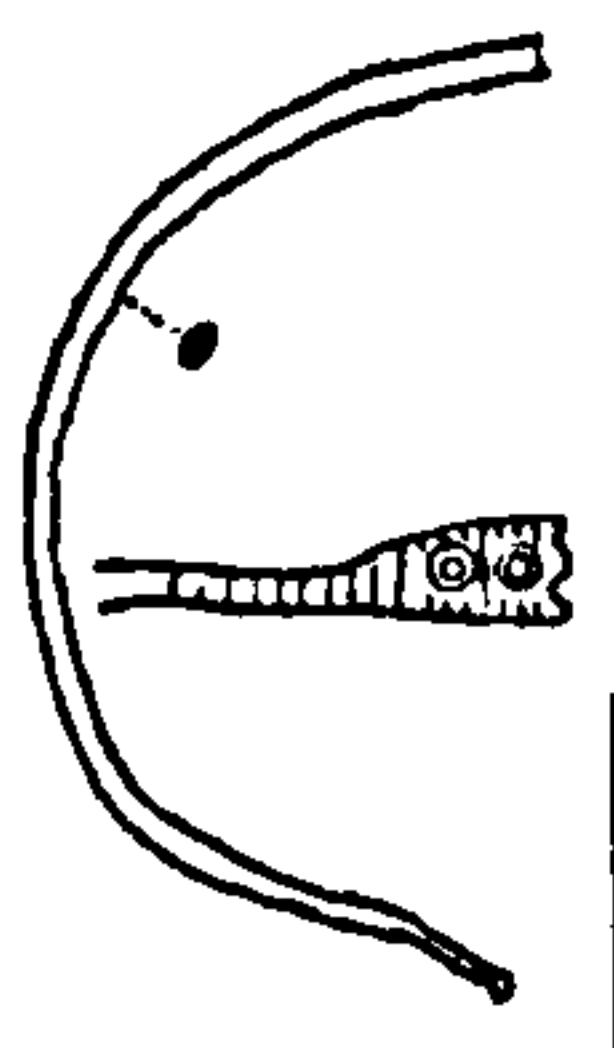
Somogyszil  
Burger 1979 taf.10  
gr.43 2

Type 65 terminals



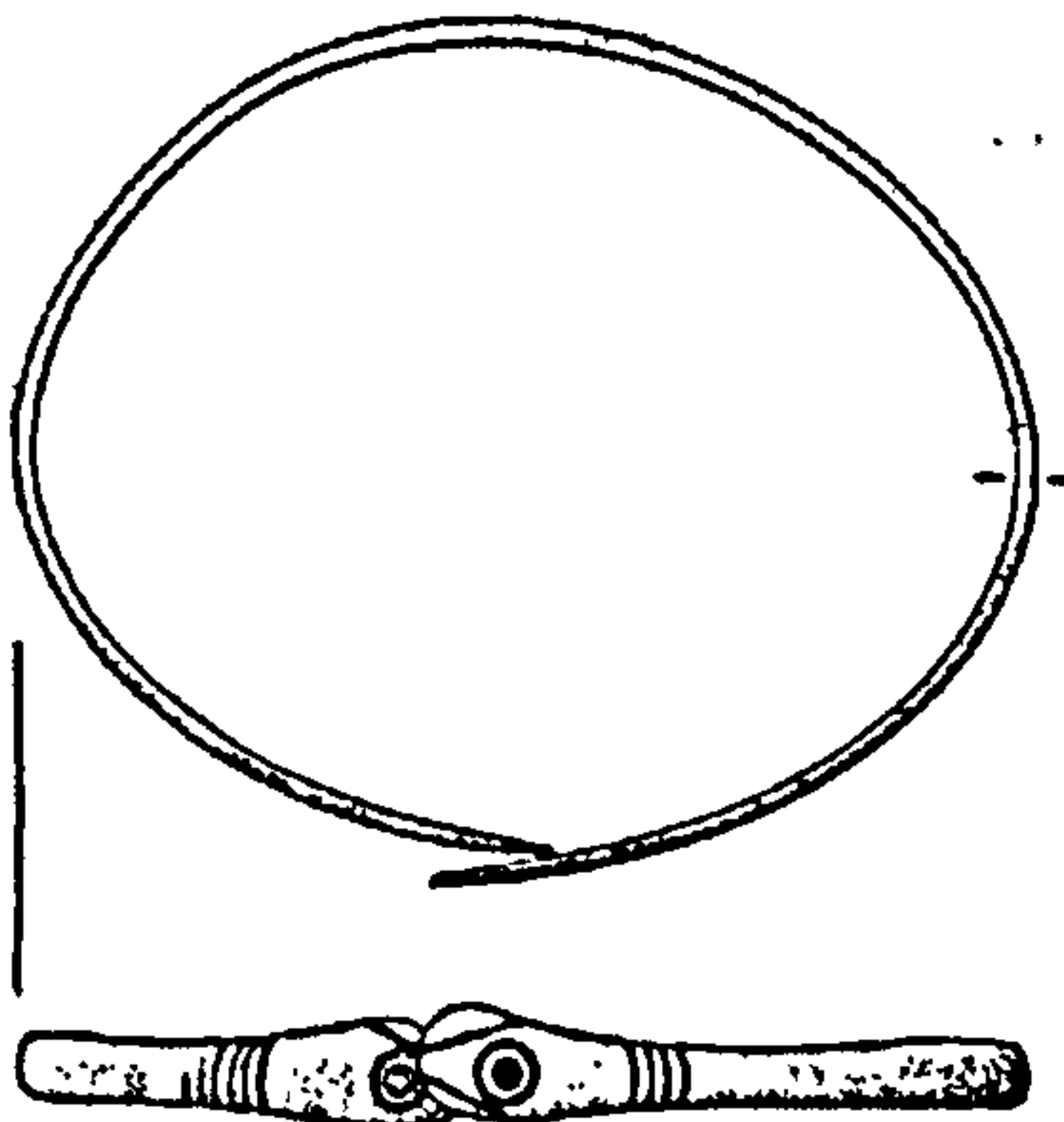
Intercisa (Dunapentele)  
Bóna & Vágo 1976 gr.1005 3

Type 101 terminals



Tokod  
Mócsy 1981 gr.27

Type 34 terminals

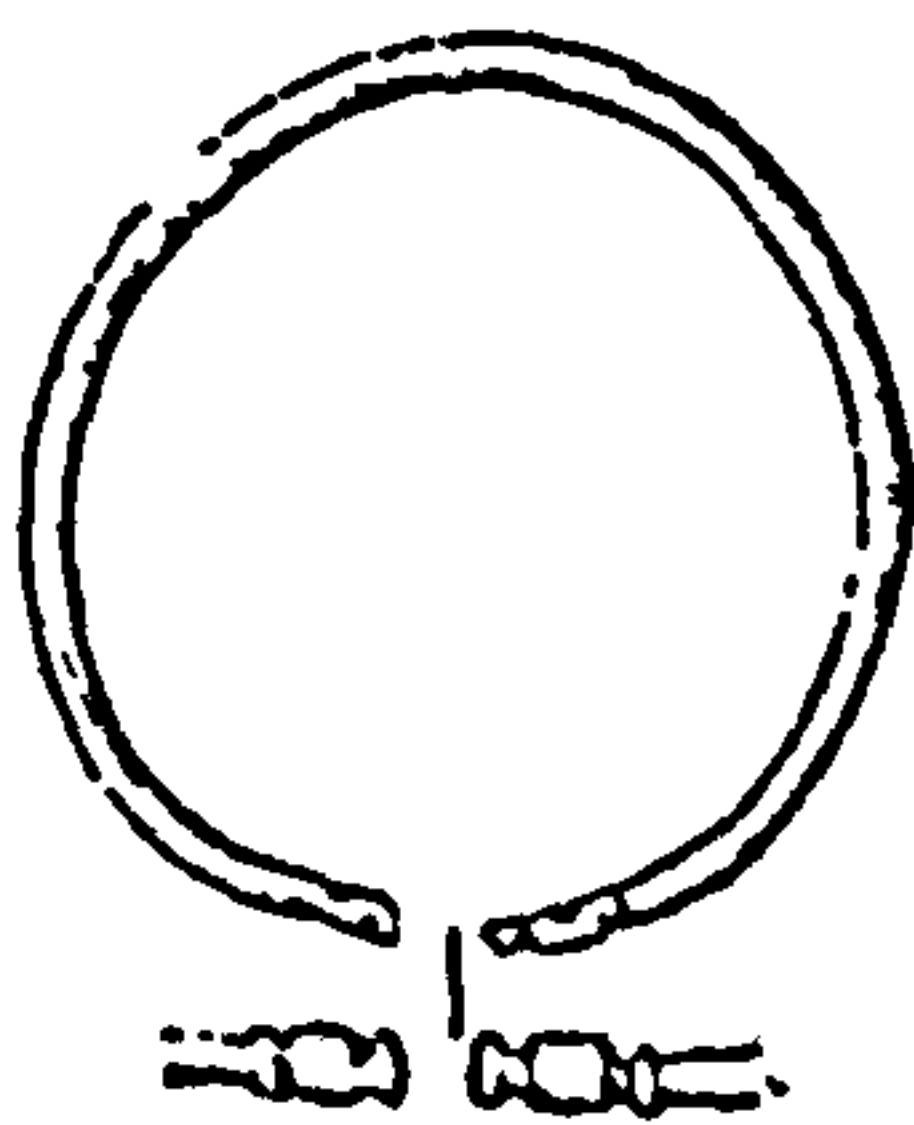


Arbon  
Overbeck 1982 taf.45 10

at varying scales



Type 42 terminals



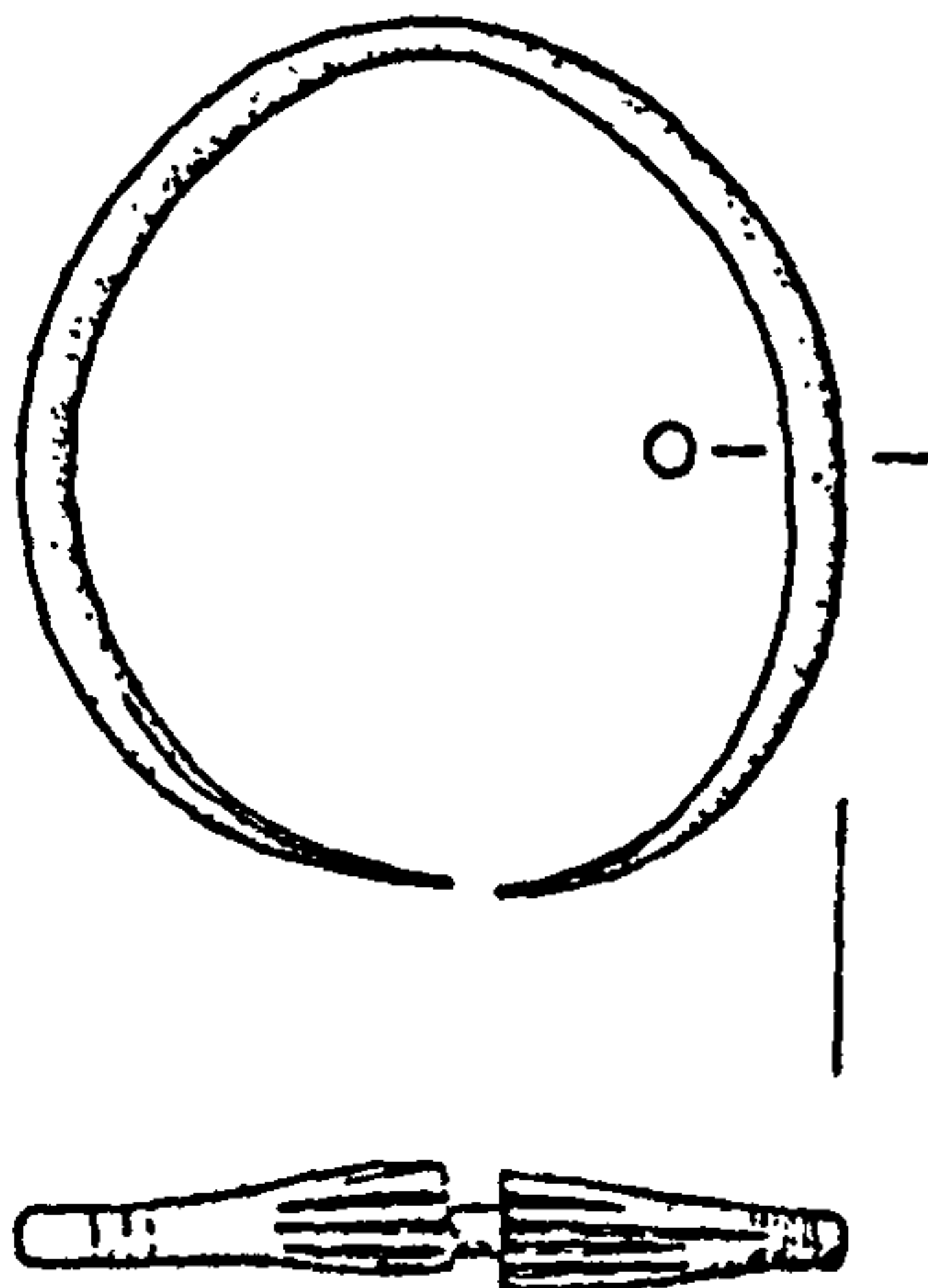
Somogyszil  
Burger 1979 gr.69 6

Type 31 terminals



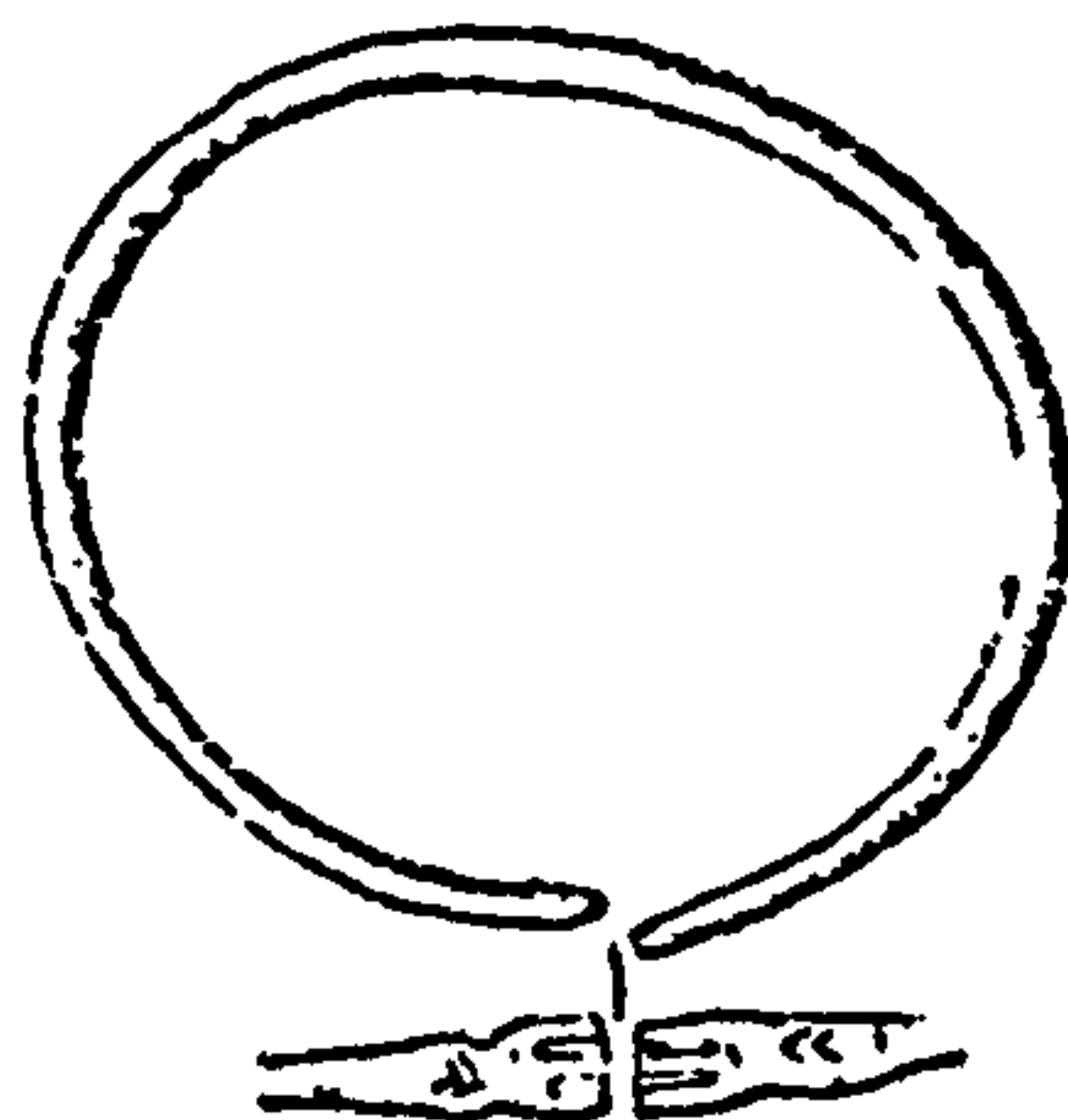
Lorenzberg  
Werner 1969 taf.39 21

Type 93 terminals



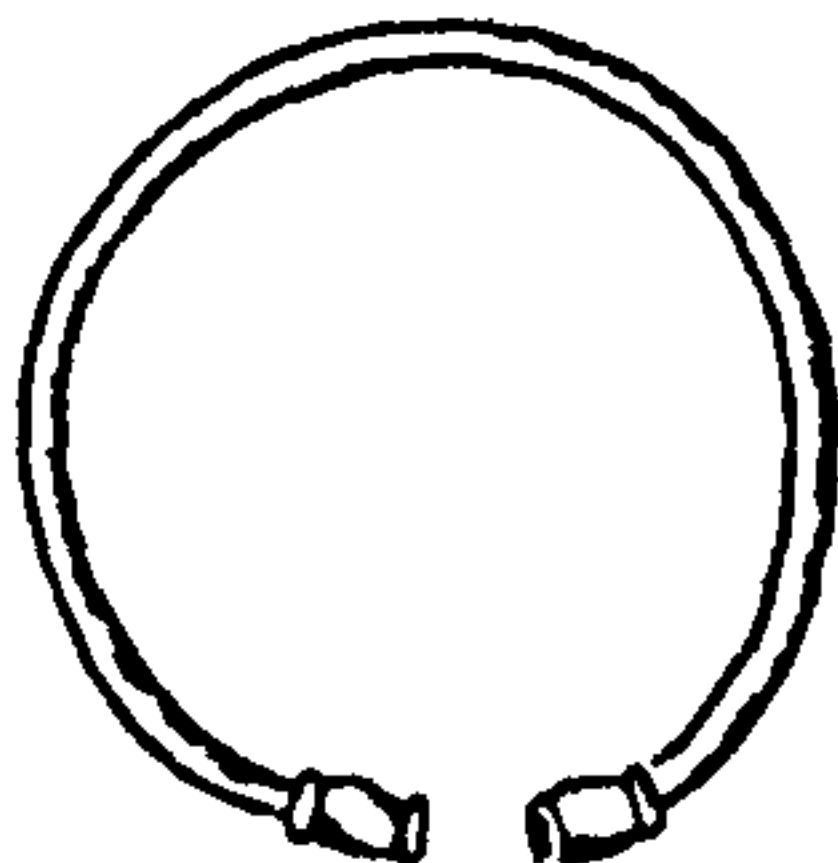
Künzing  
Keller 1971 taf.50 8

Type 18 terminals



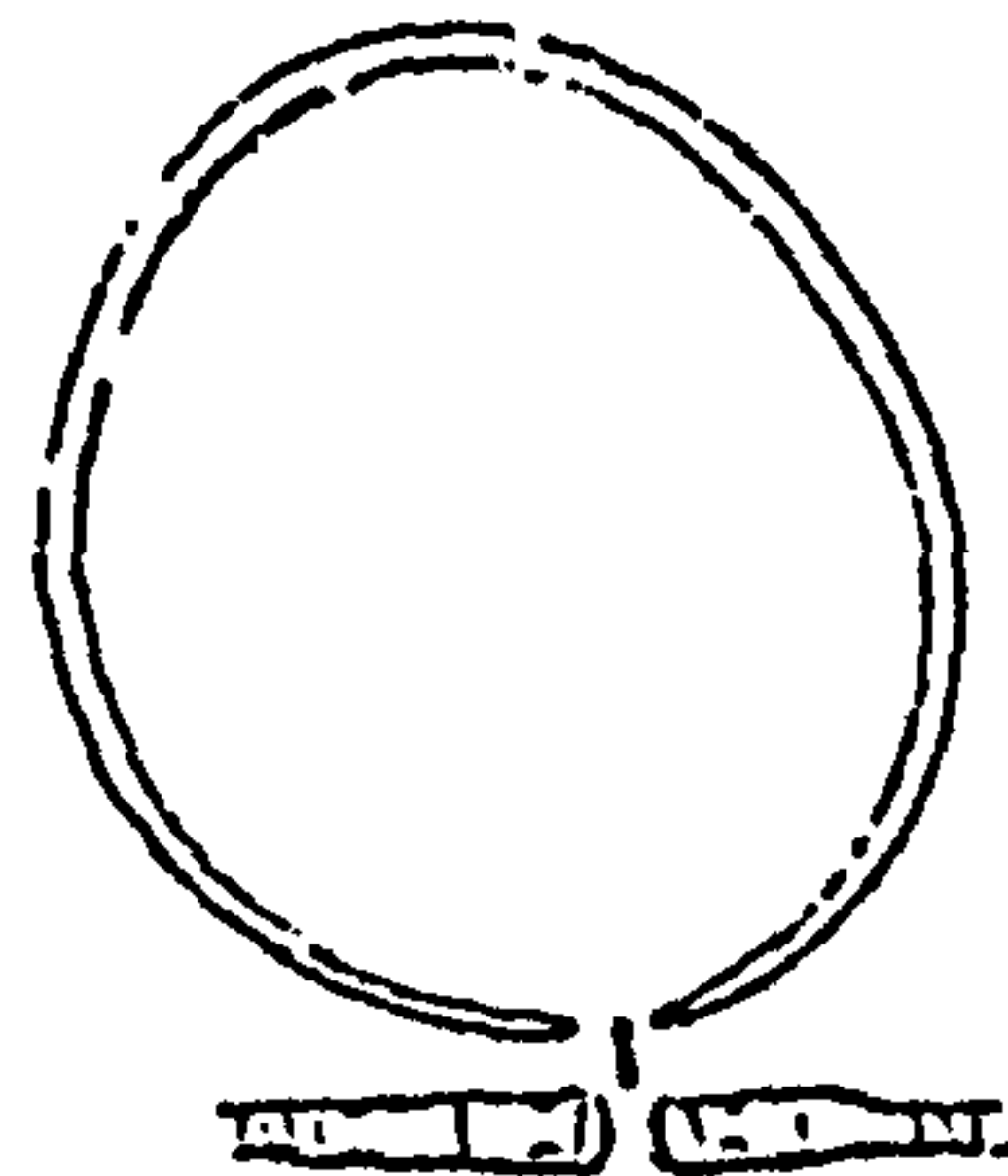
Somogyszil  
Burger 1979 gr.20 1

Type 55 terminals



Sagvar  
Burger 1966 gr.265 5

Type 36 terminals

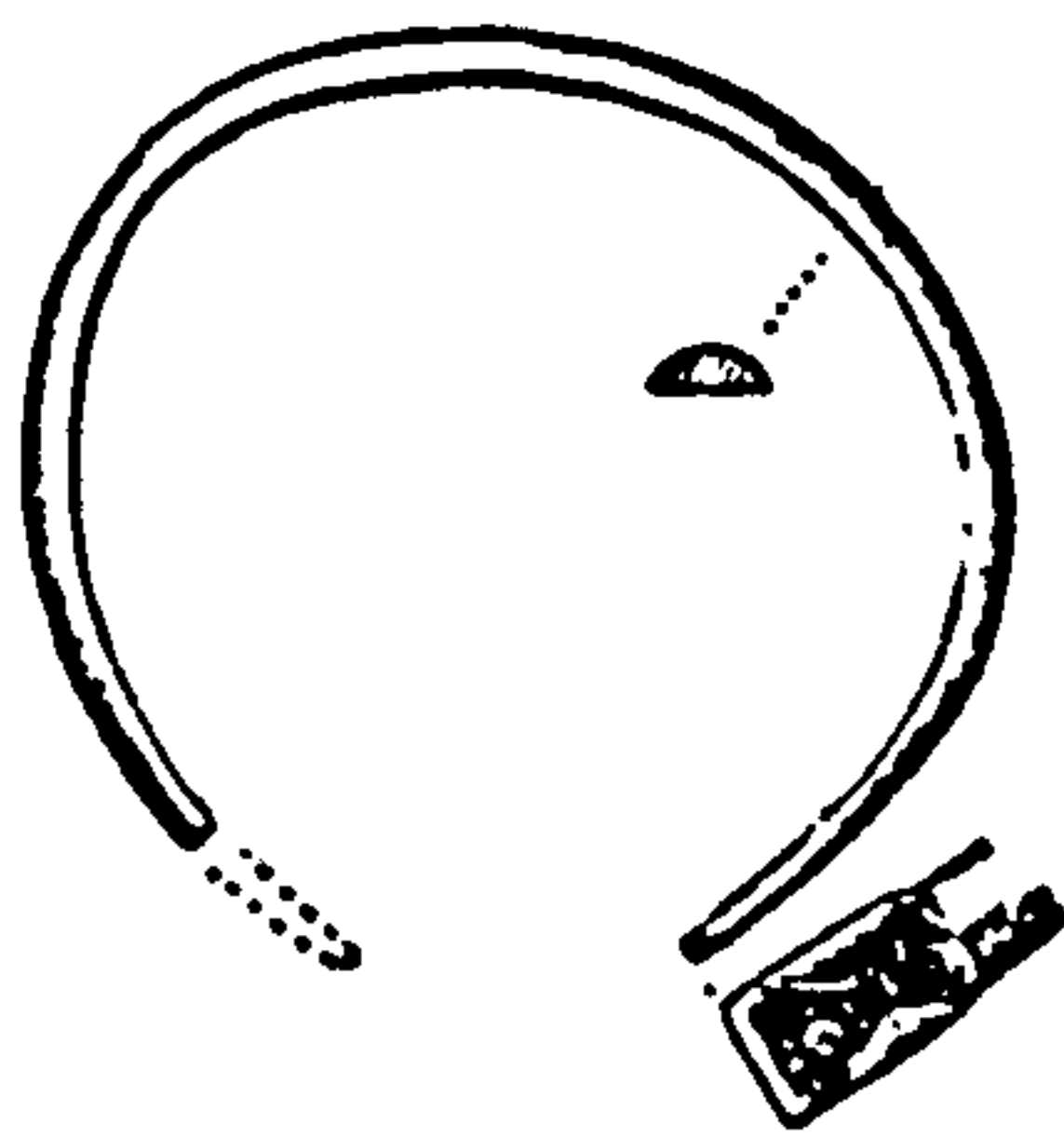


Somogyszil  
Burger 1979 gr.77

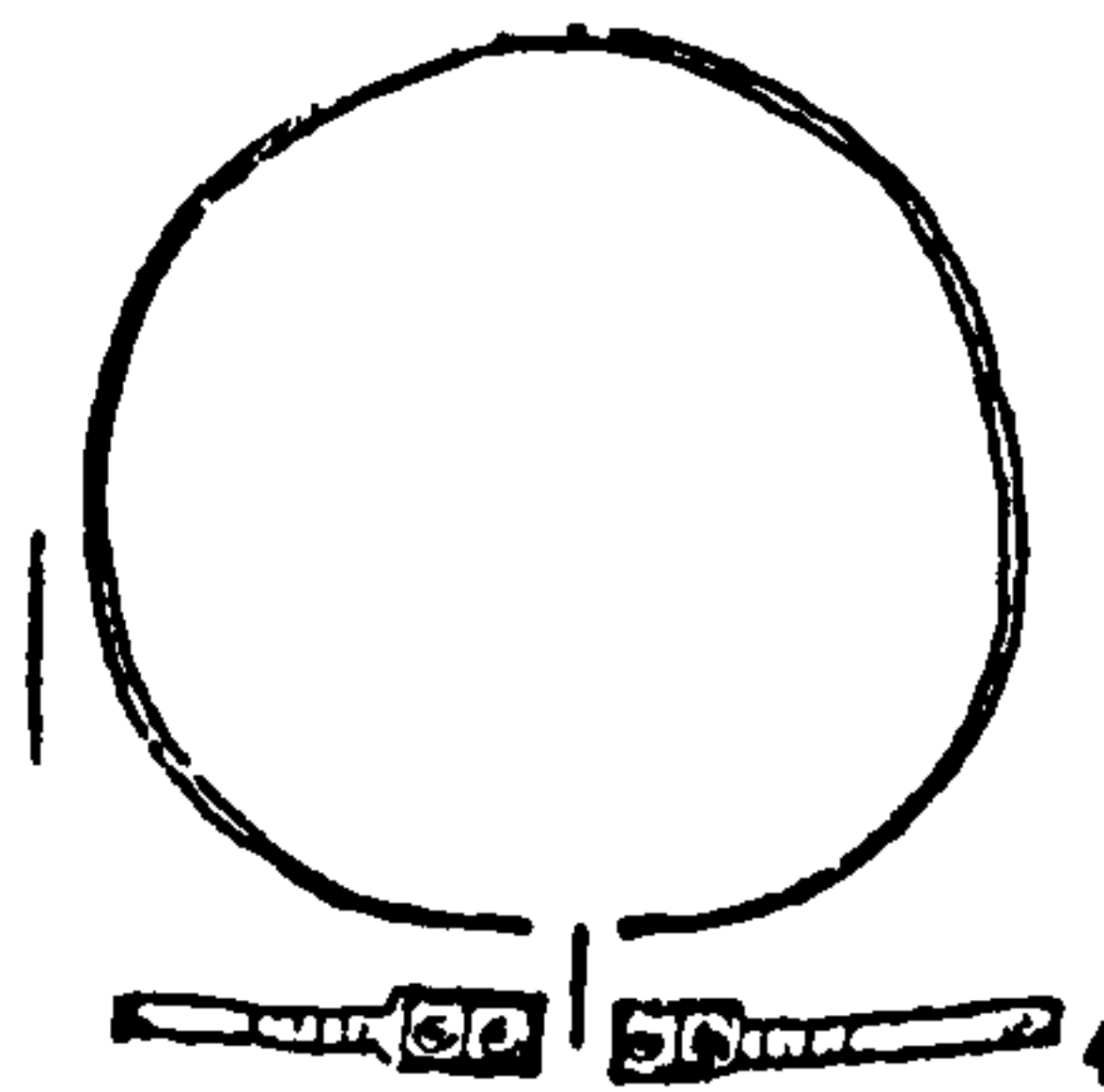
at varying scales



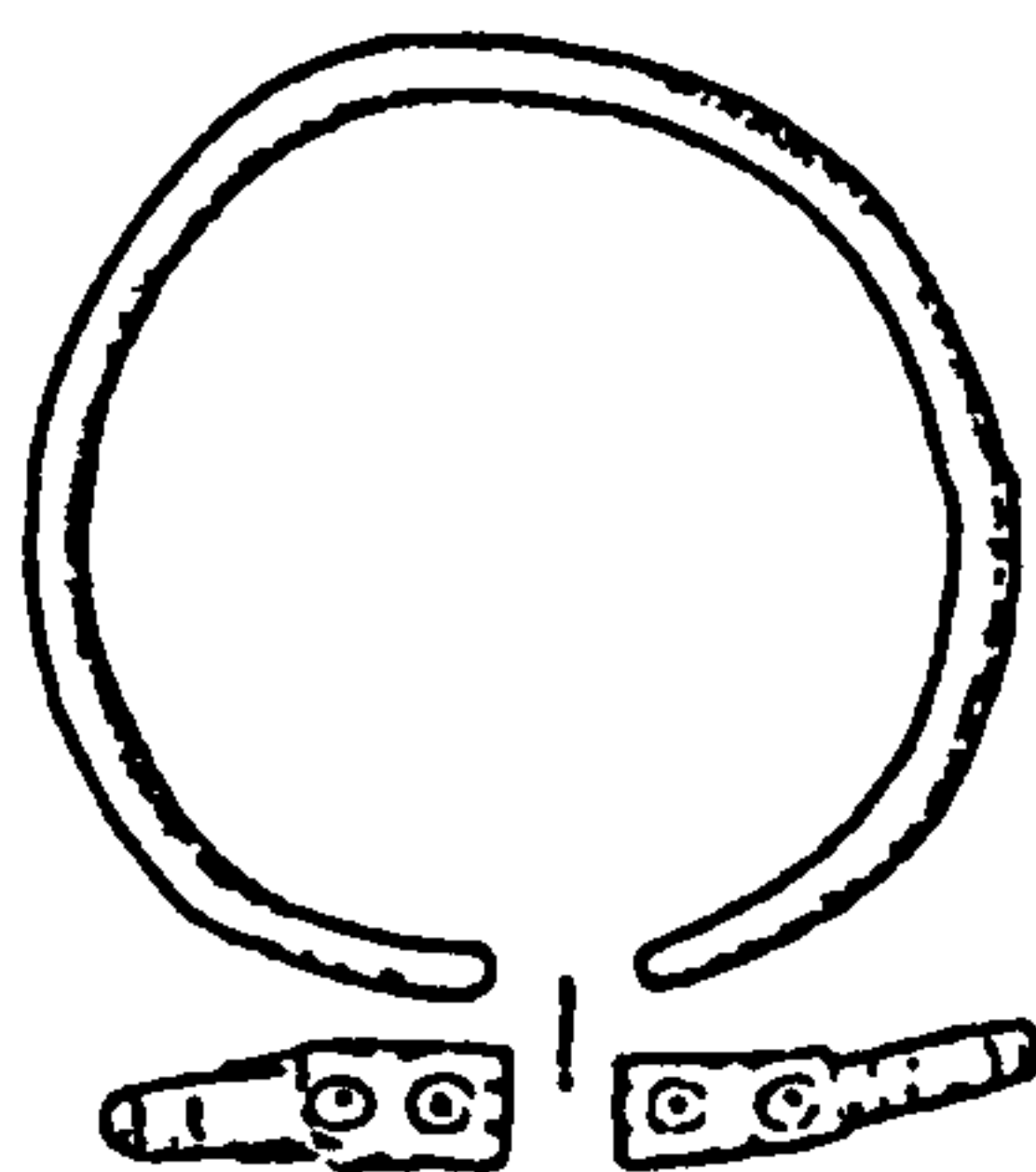
Snakeshead bracelets with square or rectangular ends and two punched circle and dot motifs



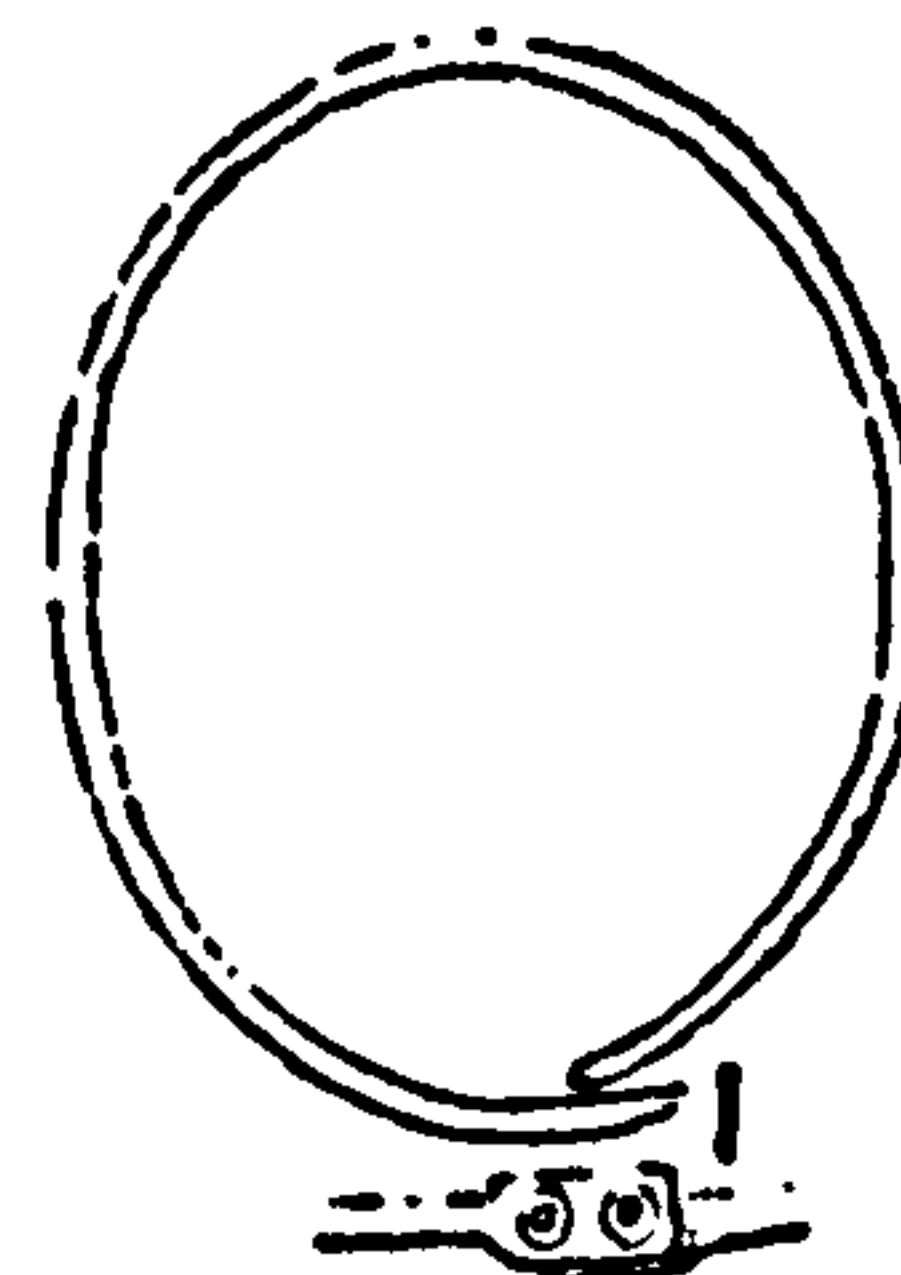
St.Albans  
Wheeler & Wheeler  
1936 fig.45 43



Sagvar  
Burger 1966 gr.197 4



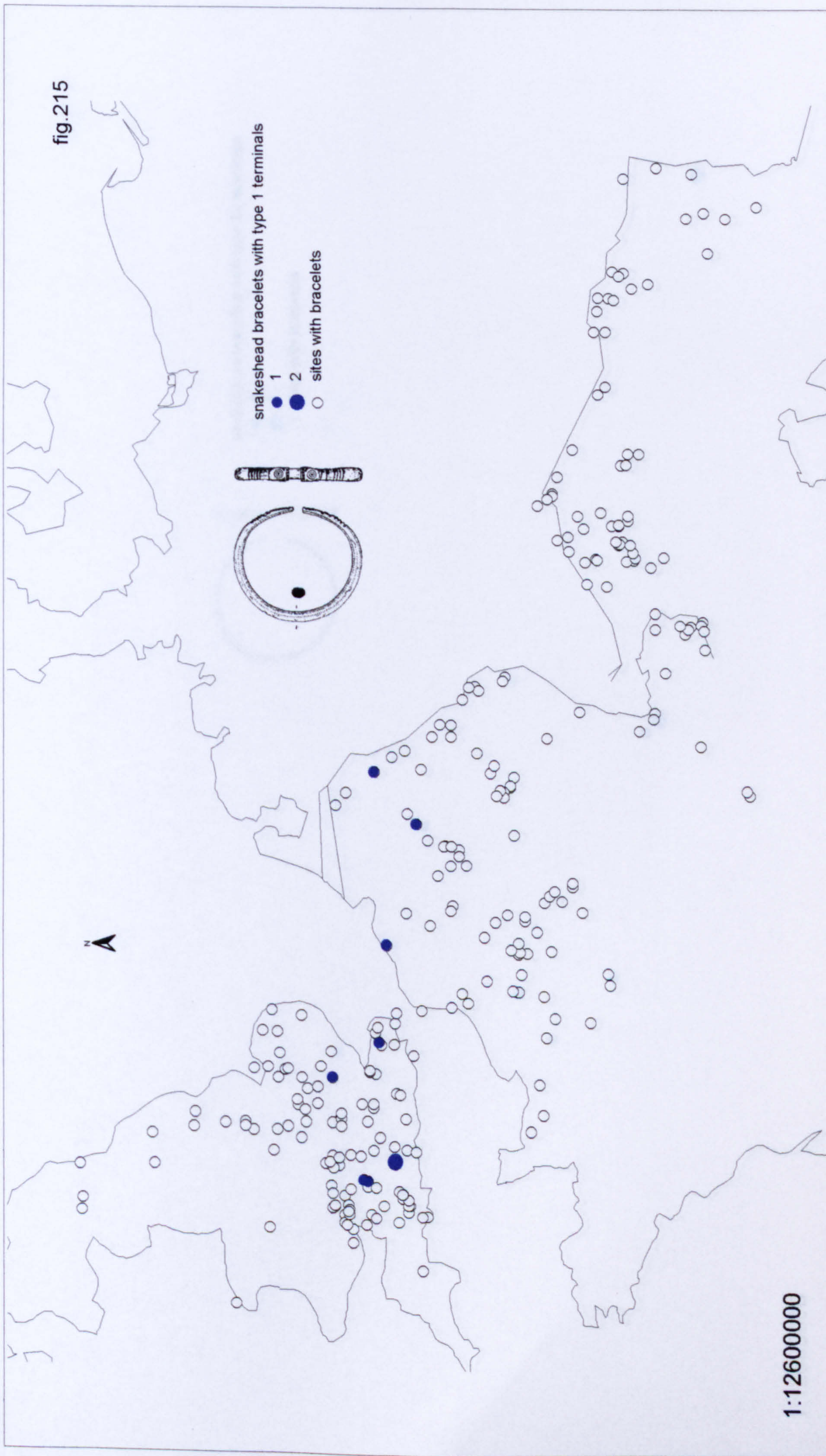
Sagvar  
Burger 1966 gr.169 1



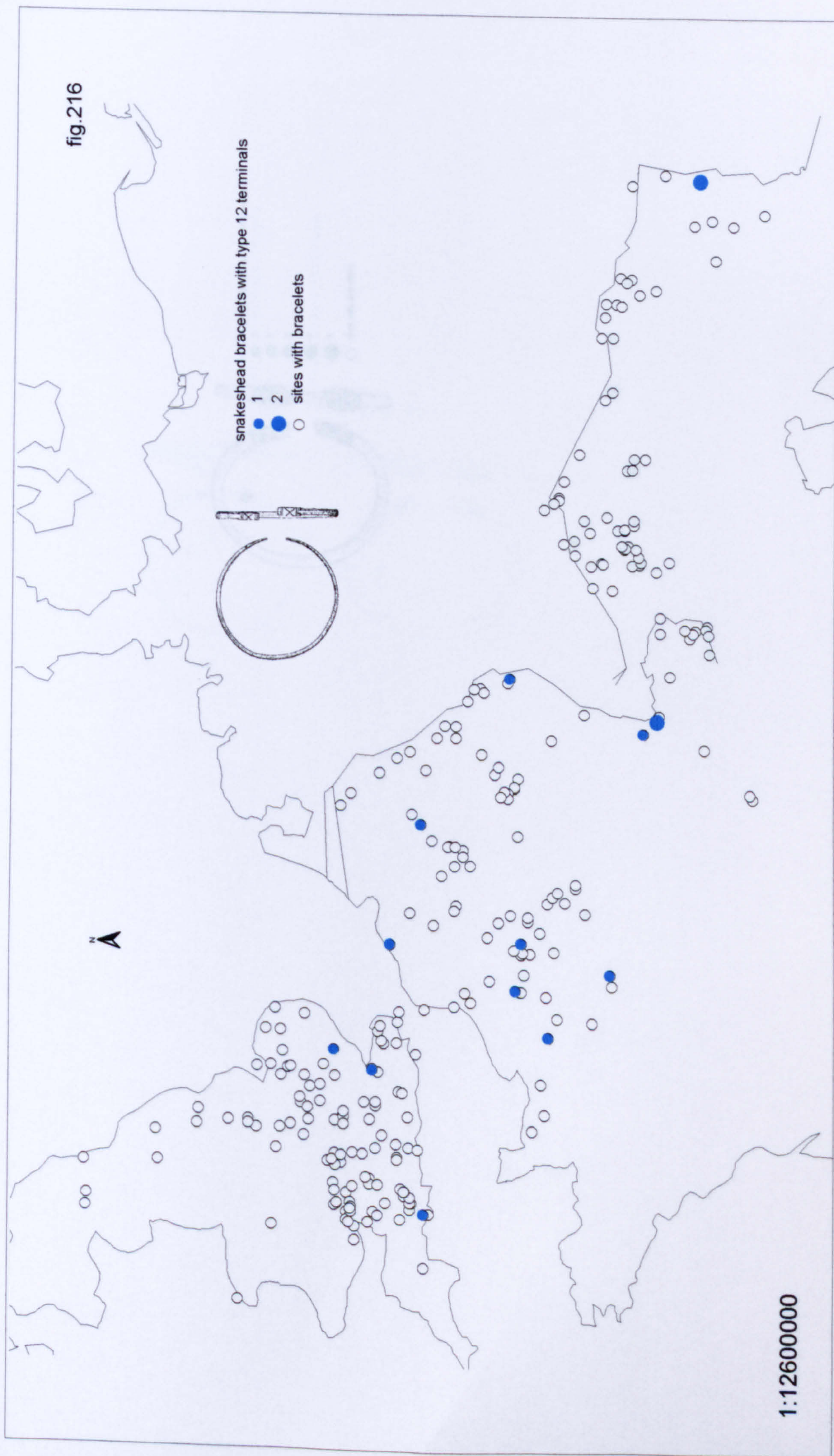
Somogyszil  
Burger 1979 gr.80 9

at varying scales

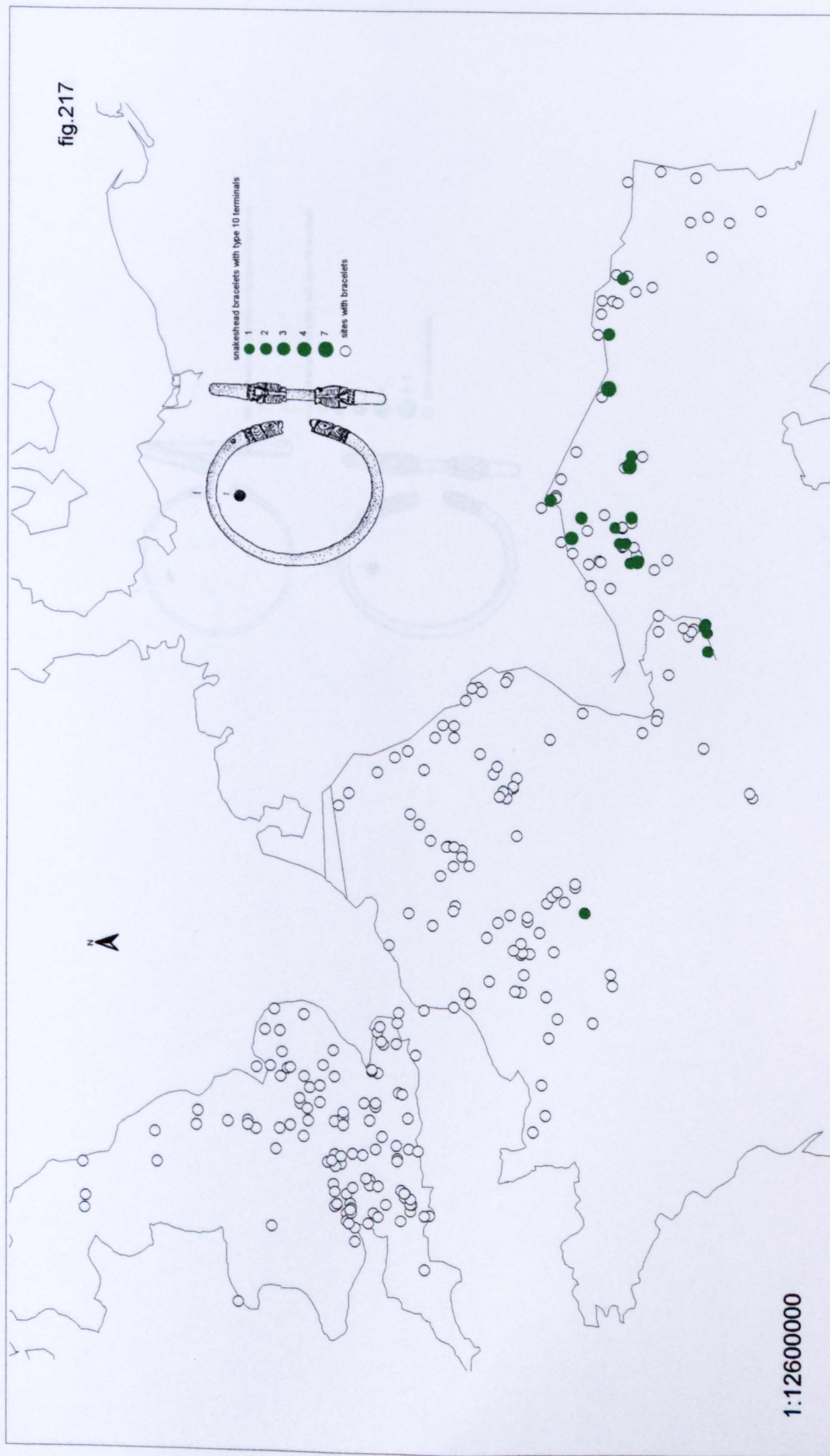




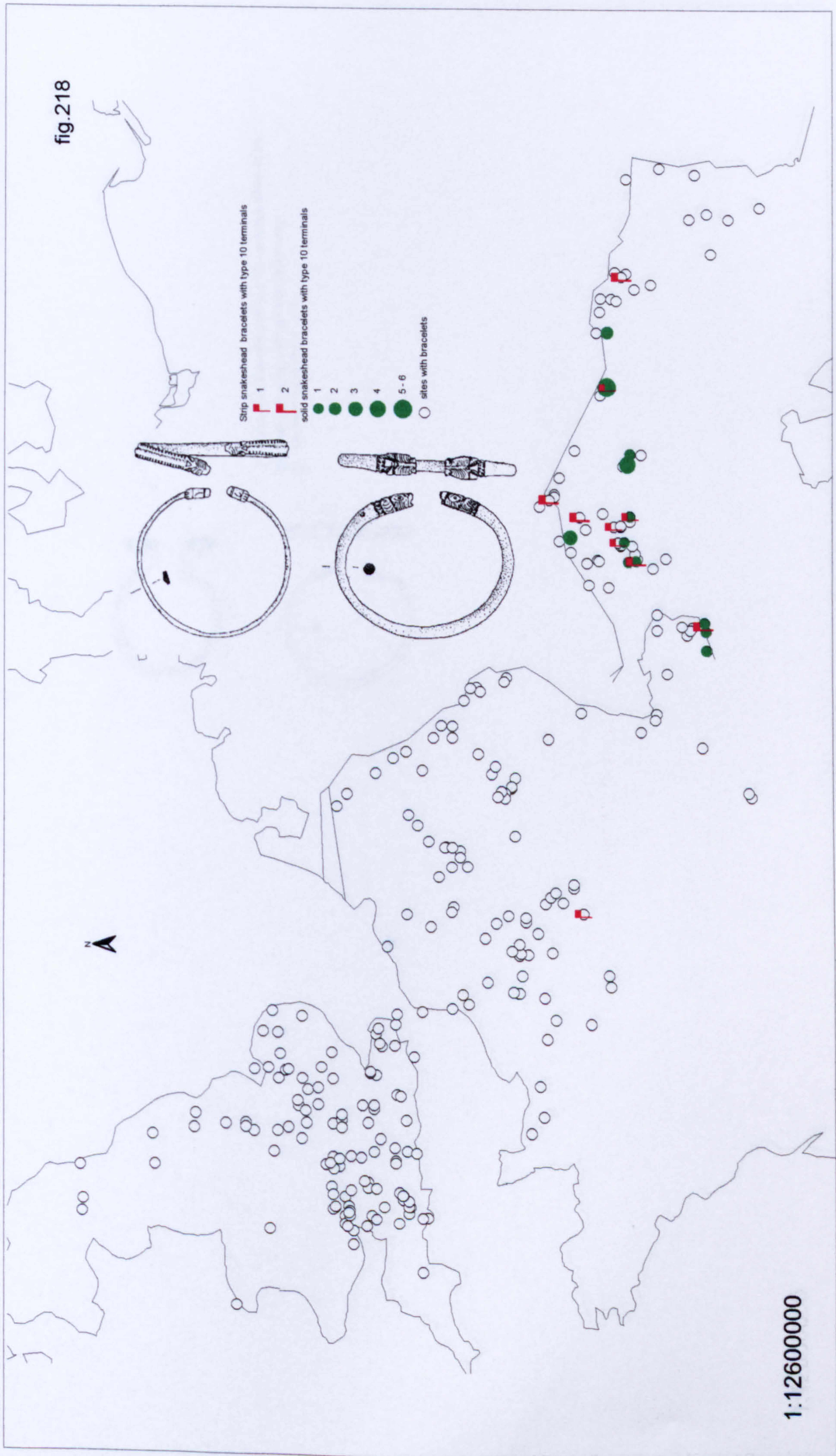




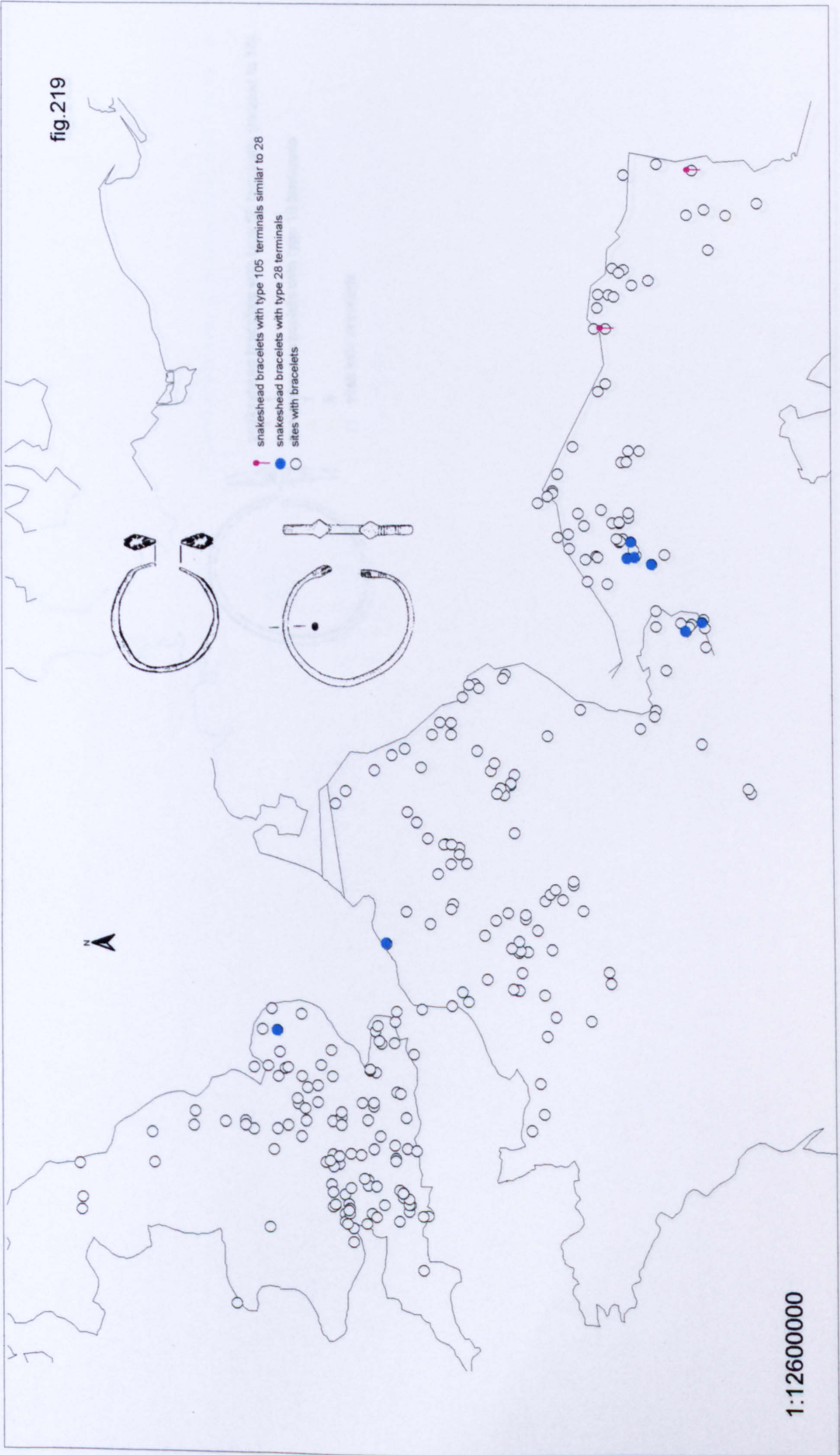




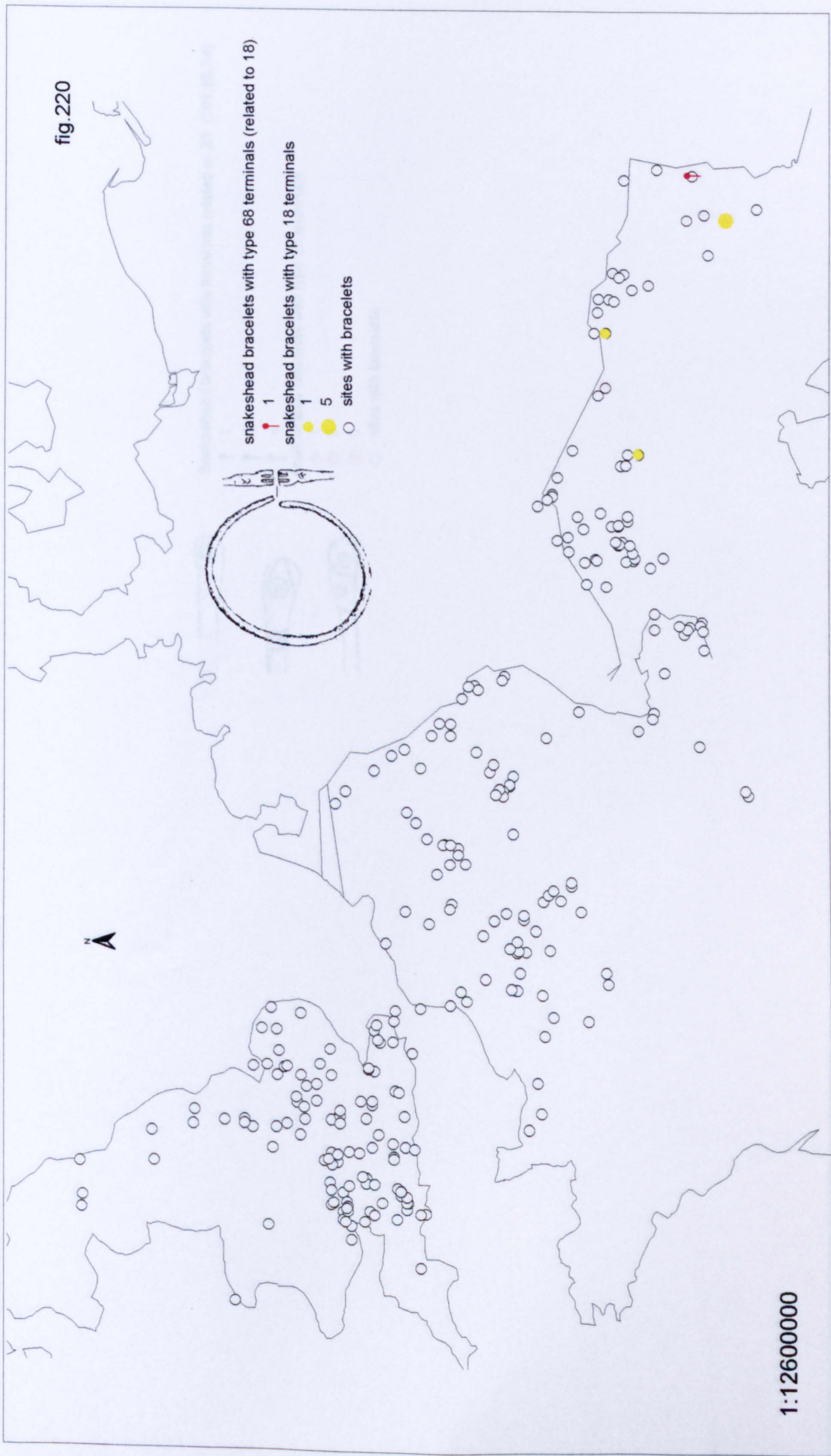














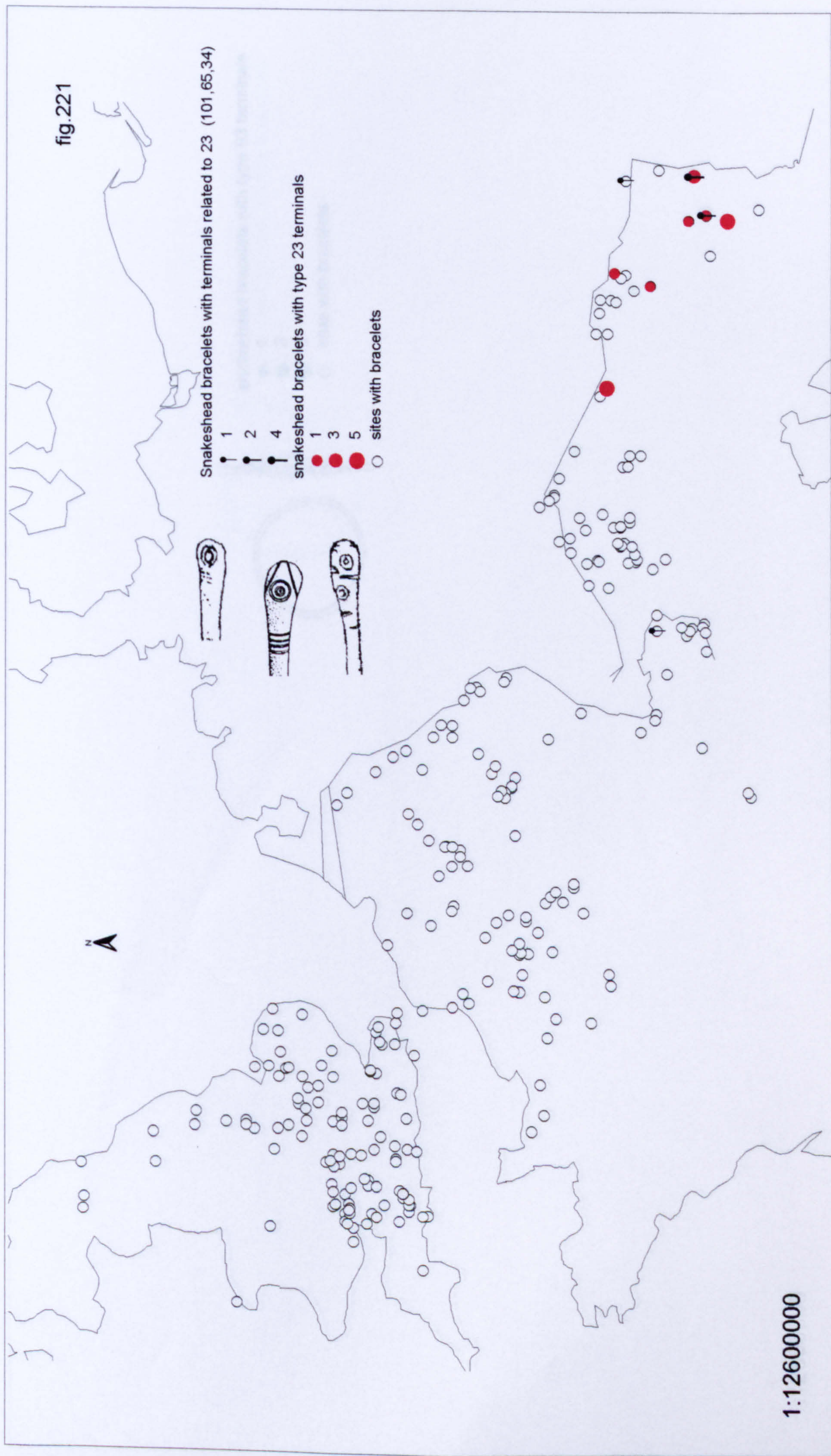








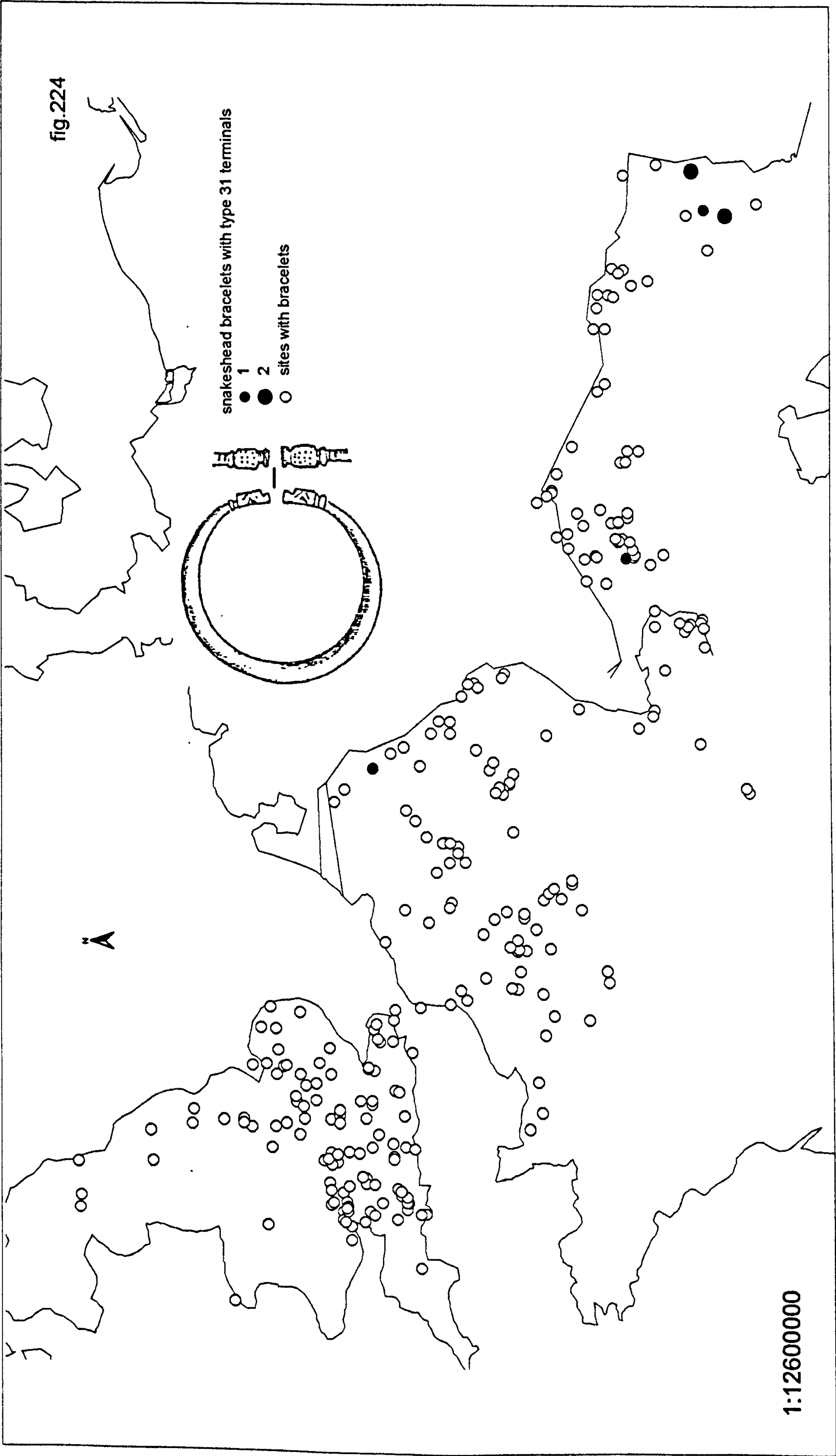


fig.223

snakeshead bracelets with type 36 terminals  
1 5  
○ sites with bracelets

1:12600000





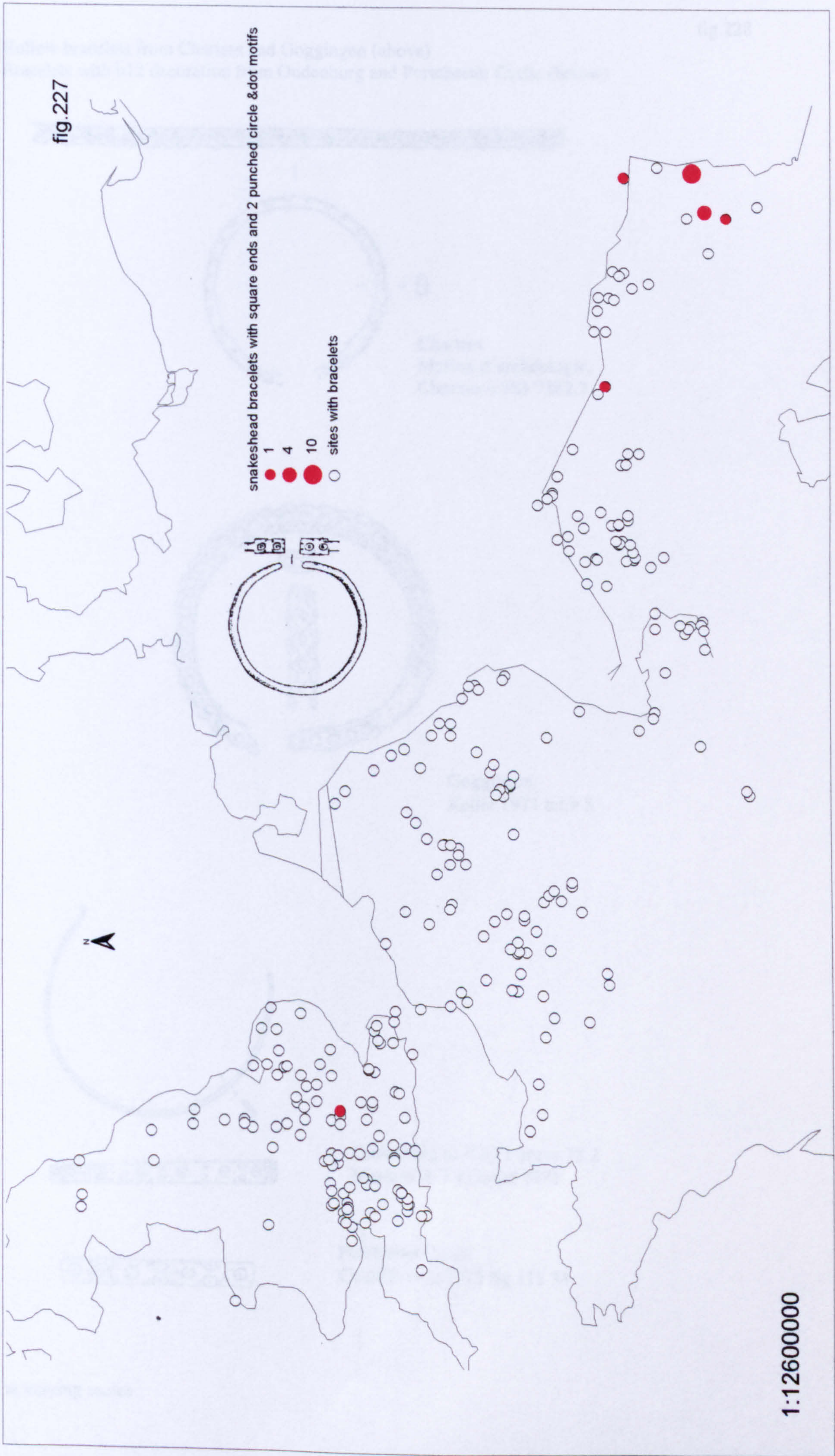






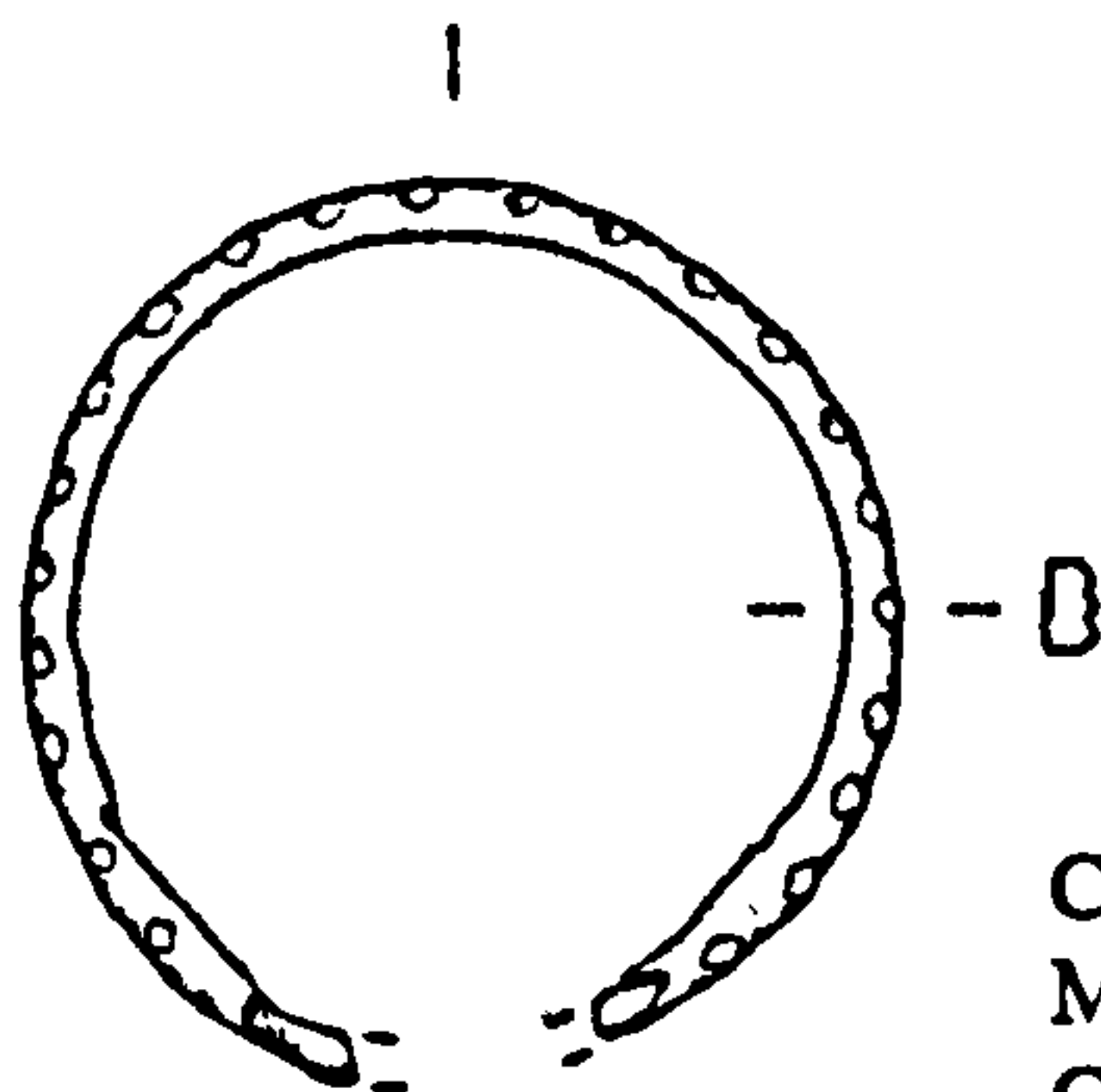




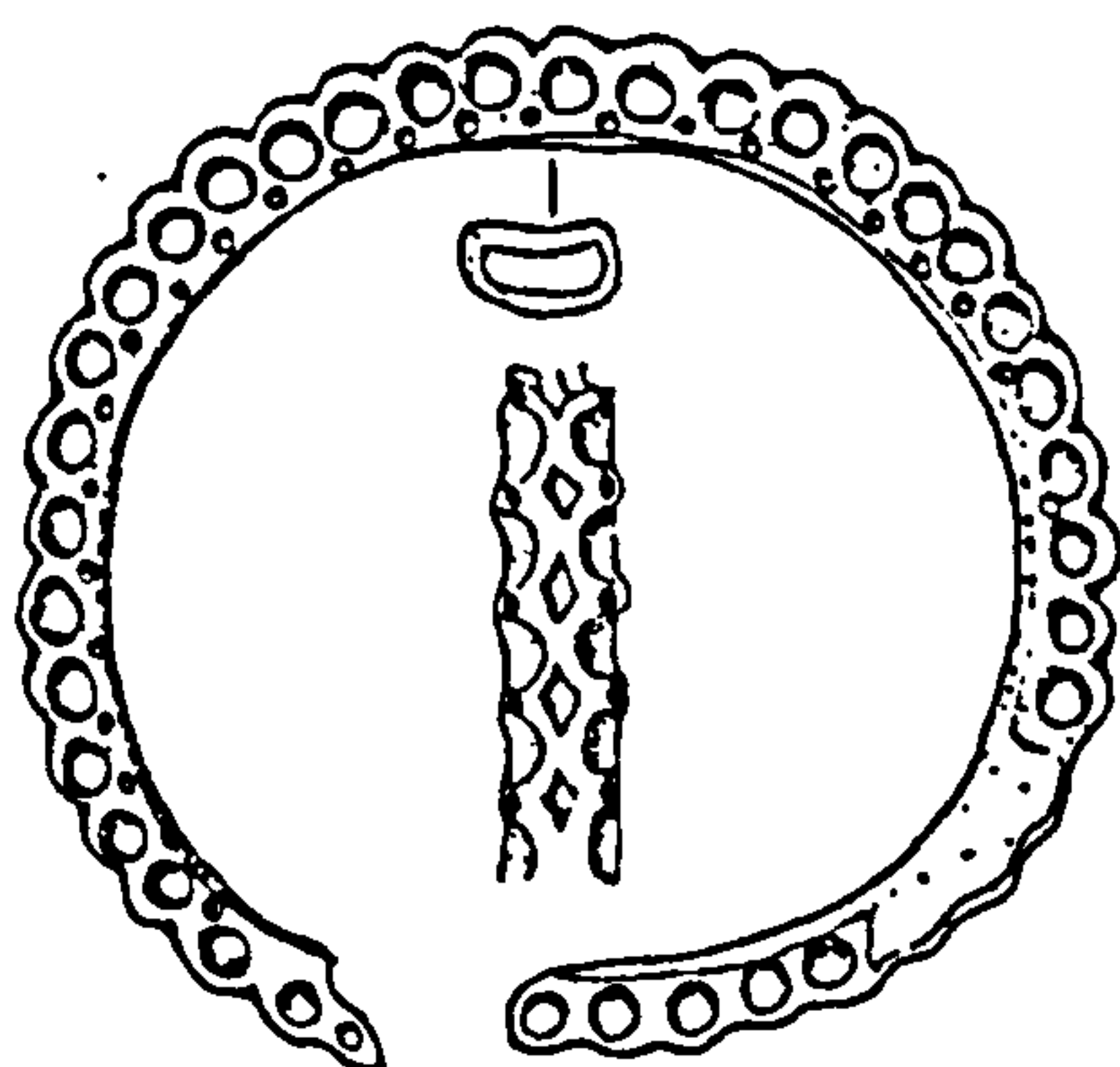




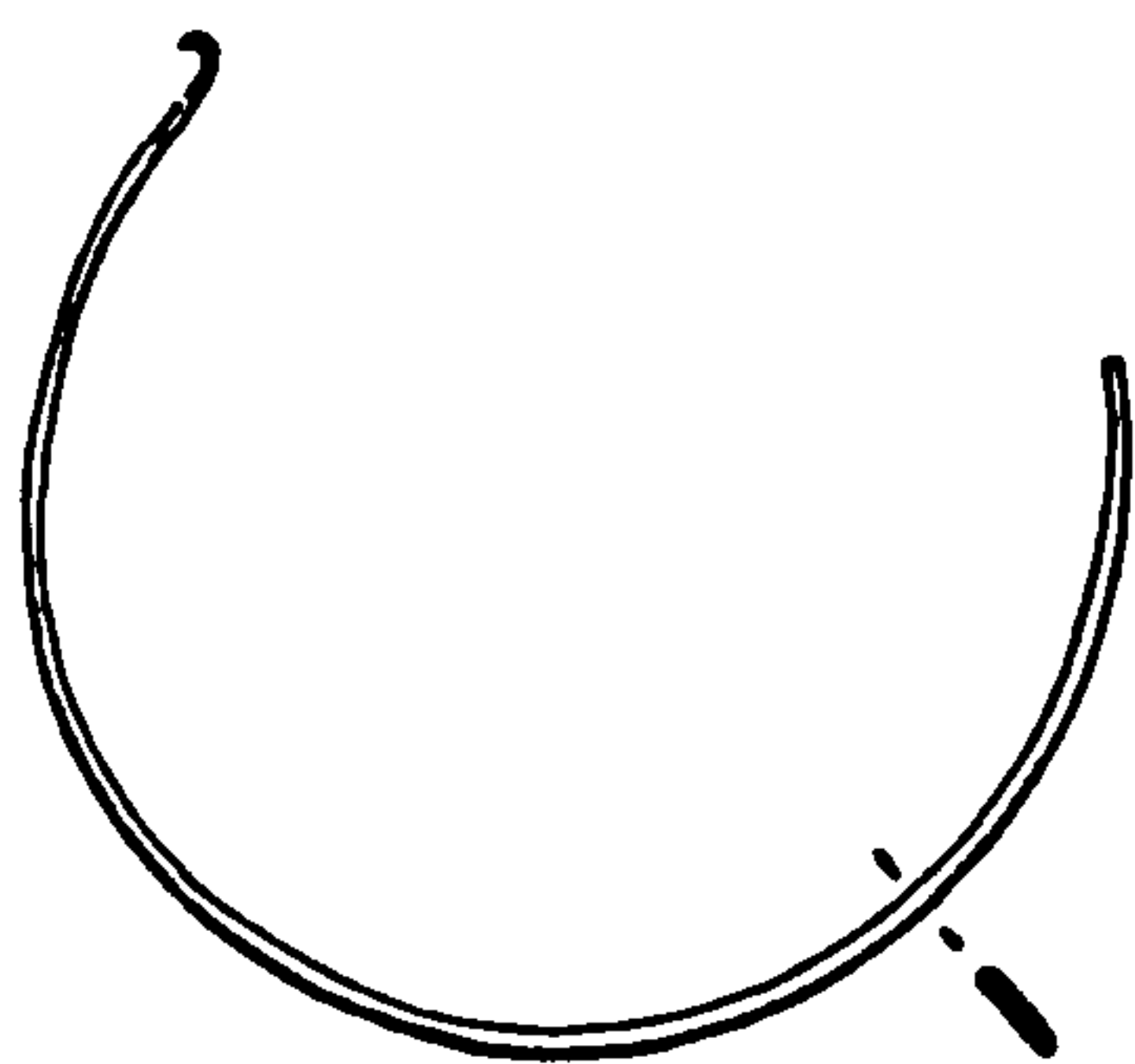
Hollow bracelets from Chartres and Goggingen (above)  
Bracelets with b12 decoration from Oudenburg and Portchester Castle (below)



Chartres  
Maison d'archéologie,  
Chartres s.783 7382.3



Goggingen  
Keller 1971 taf.9 3



Oudenburg pl.XXVI grave 78 2  
Mertens & Van Impe 1971



Portchester Castle  
Cunliffe et al 1975 fig.112 34

lat

at varying scales



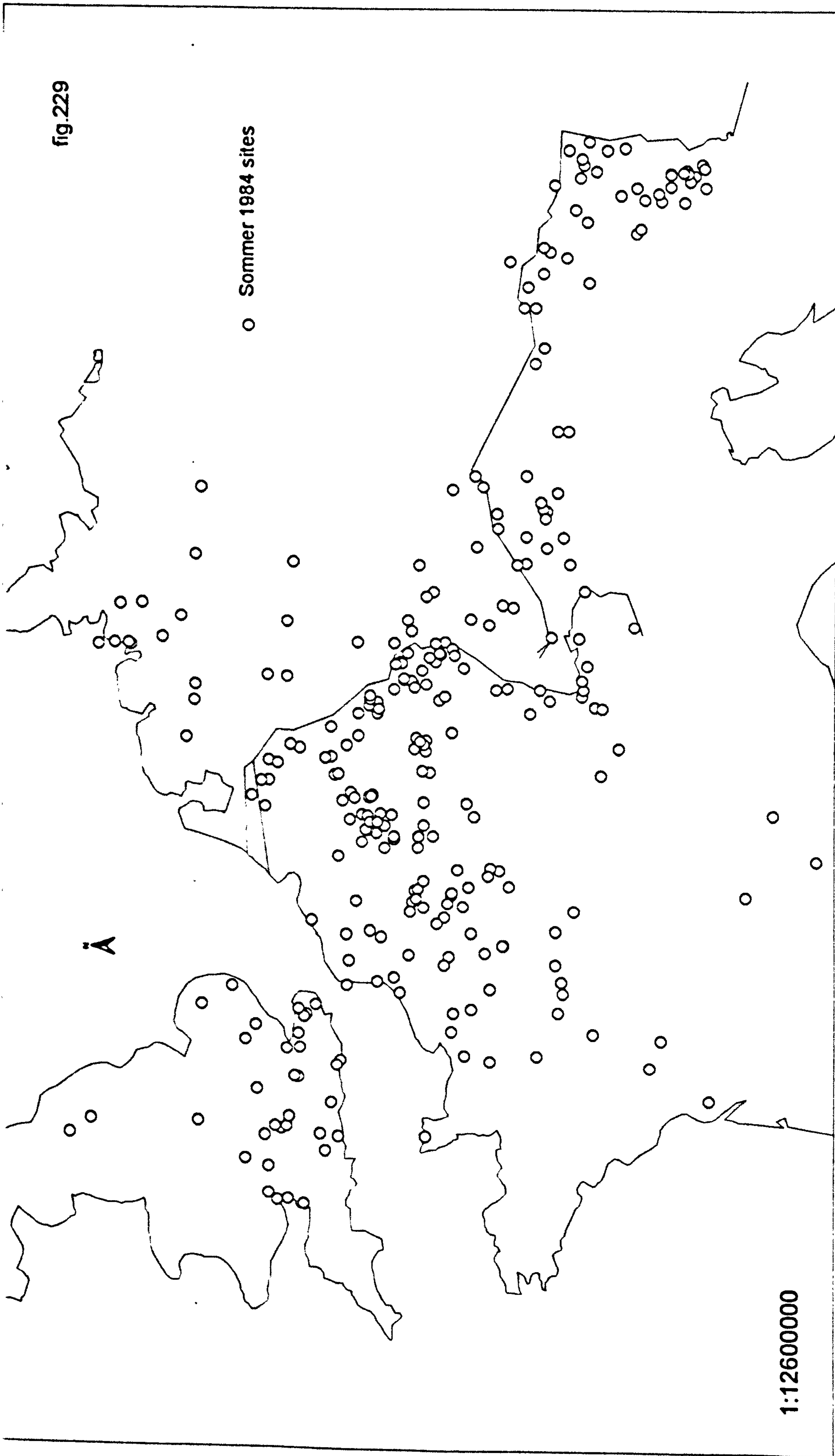
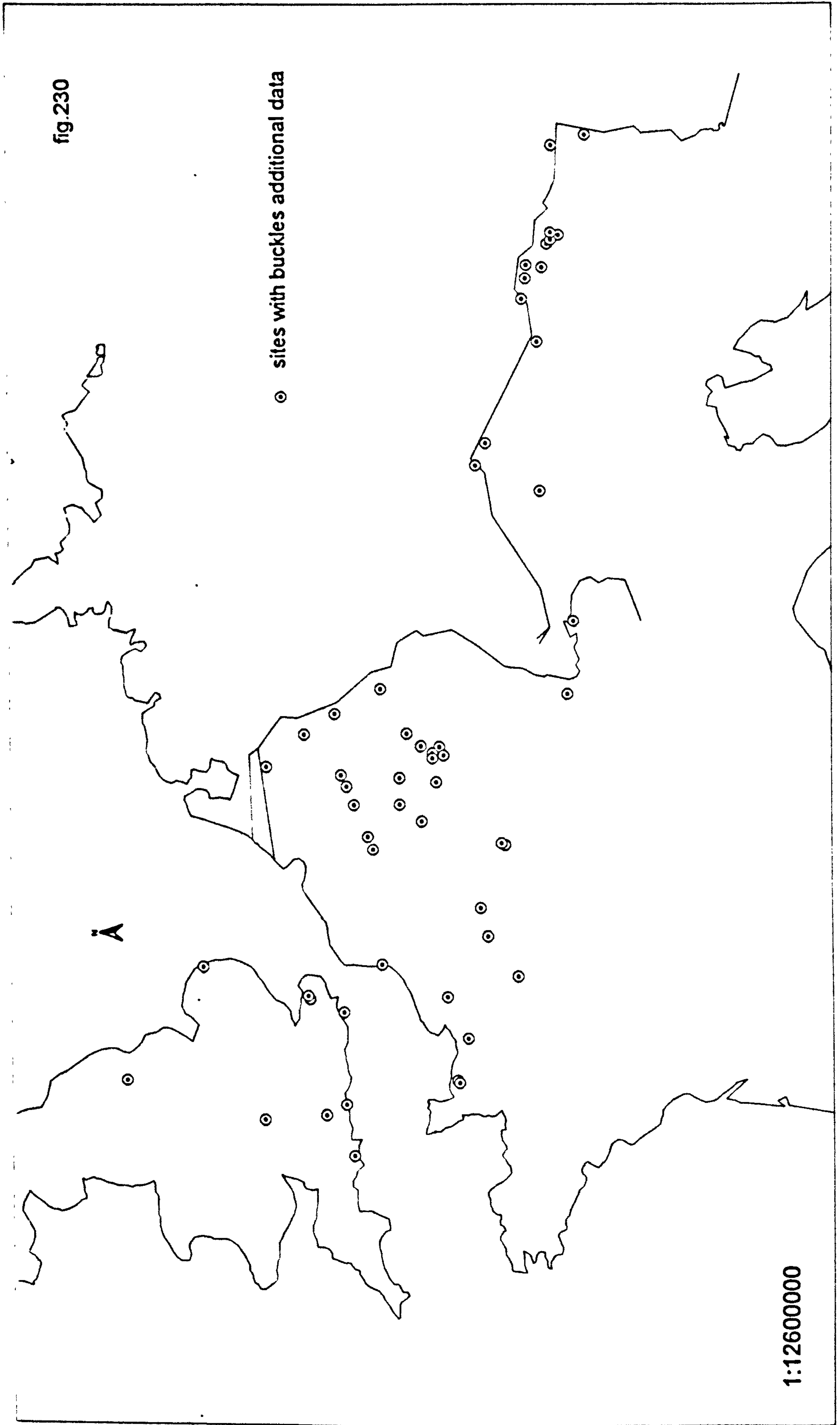


fig. 229

○ Sommer 1984 sites

1:12600000







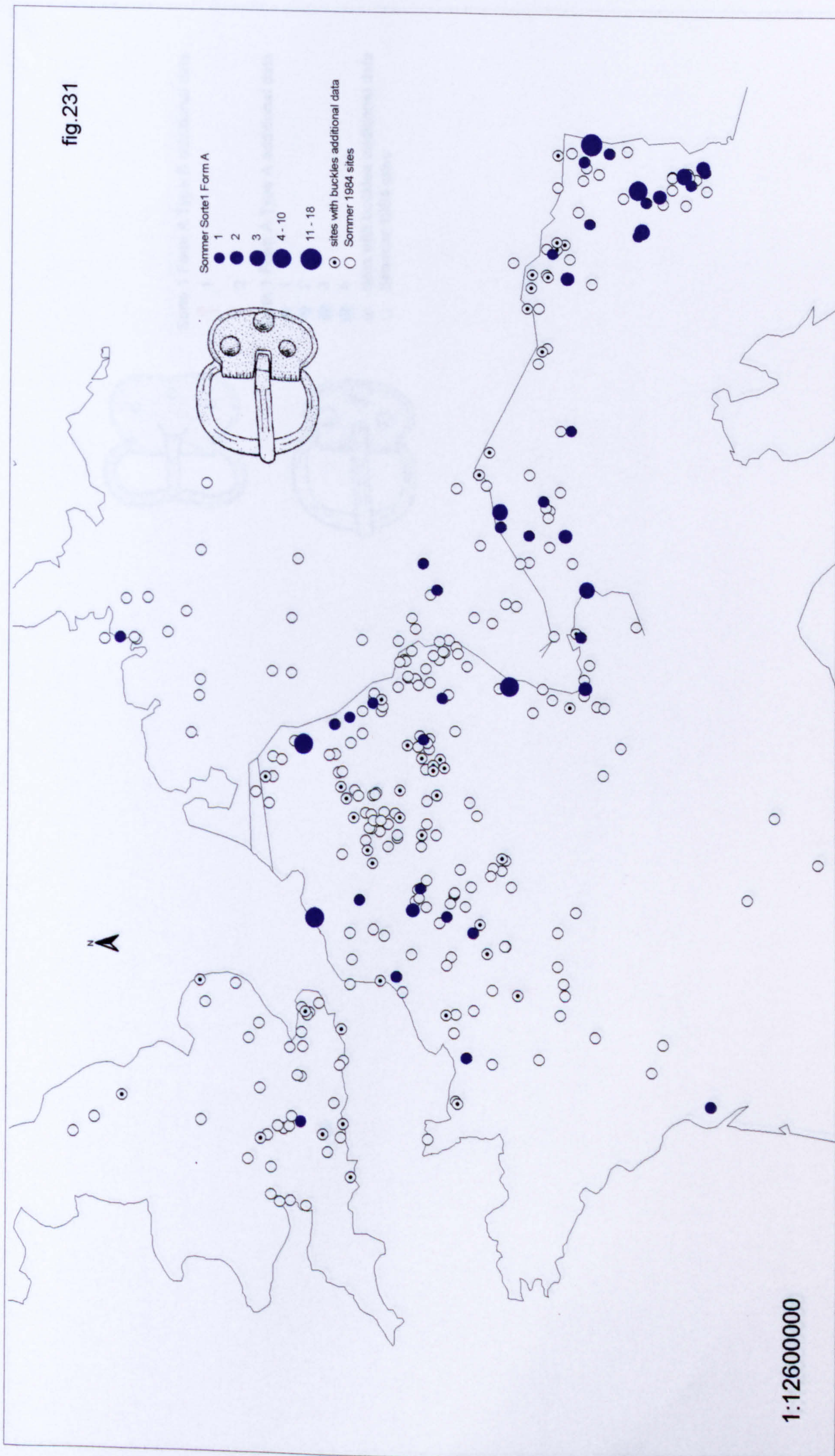
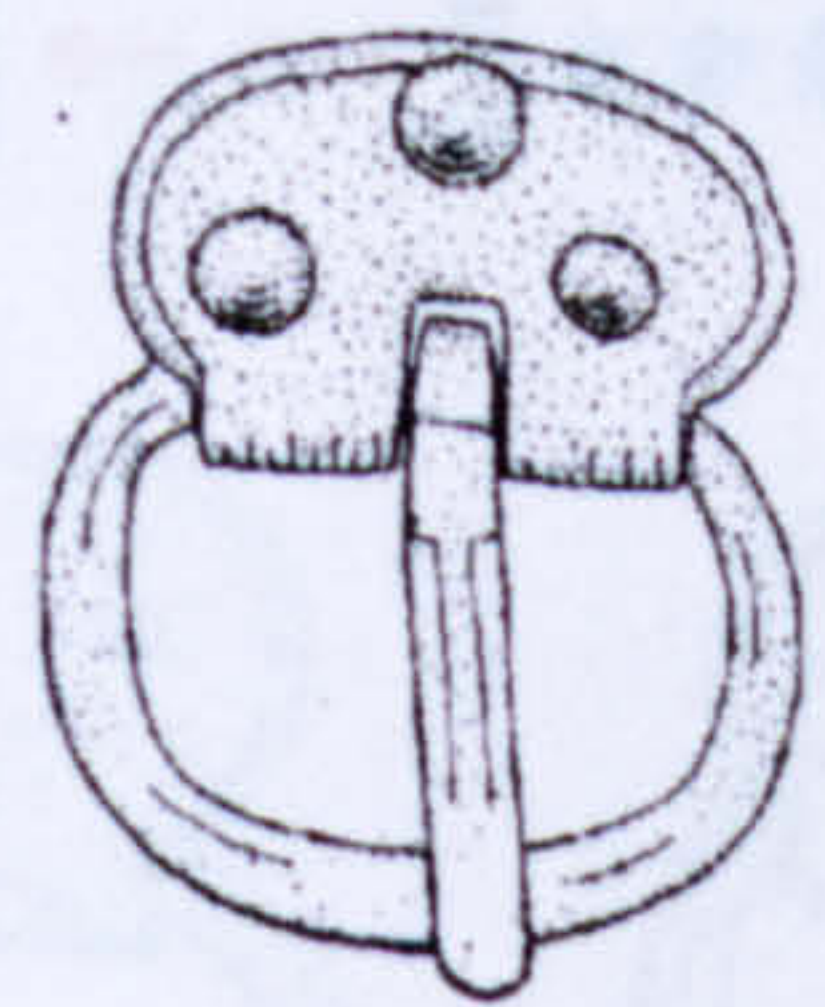


fig.231

- Sommer Sorte 1 Form A
- 1
  - 2
  - 3
  - 4 - 10
  - 11 - 18
  - sites with buckles additional data
  - Sommer 1984 sites



1:12600000



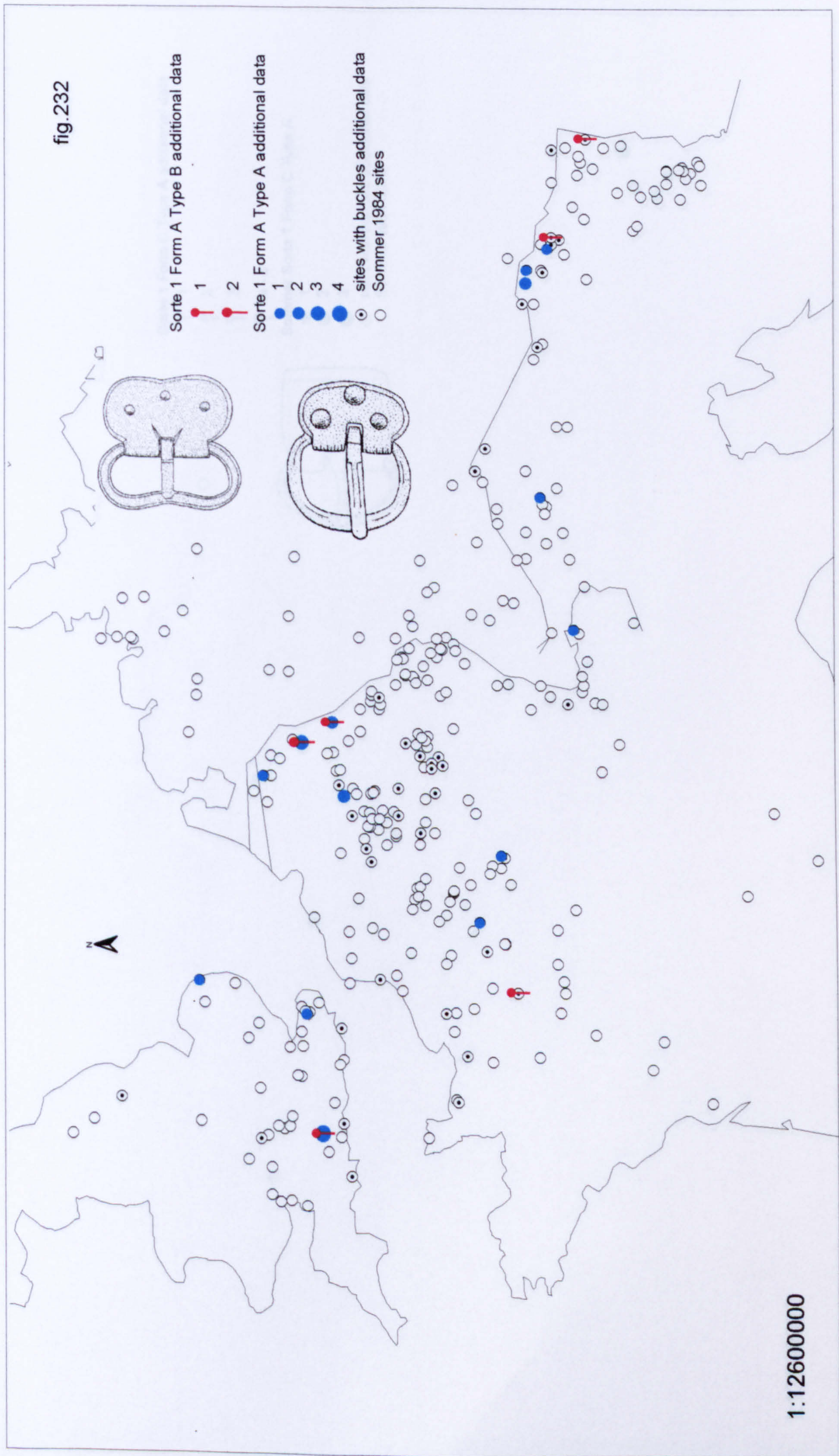


fig.232

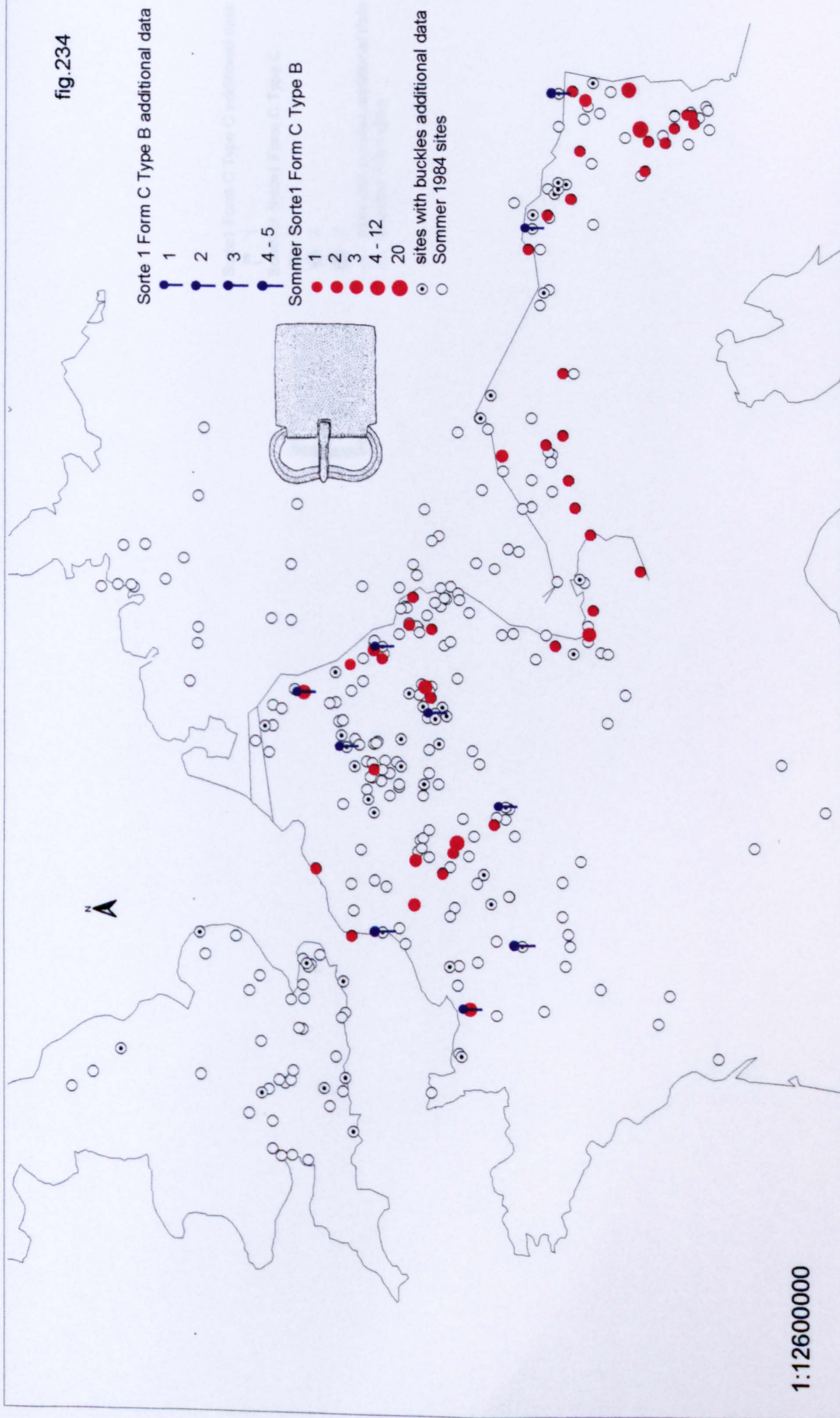
1:12600000





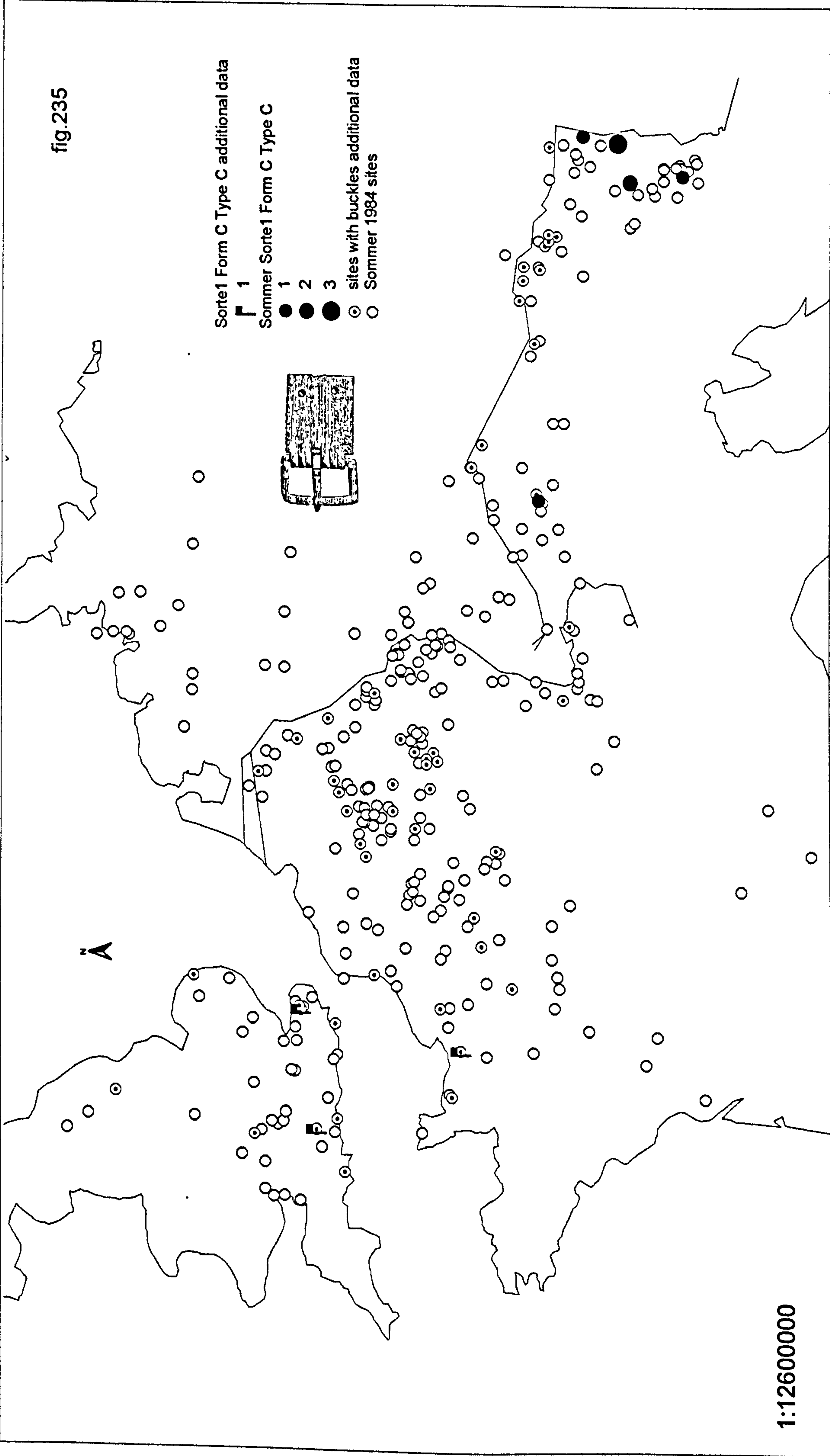


fig.234



1:12600000







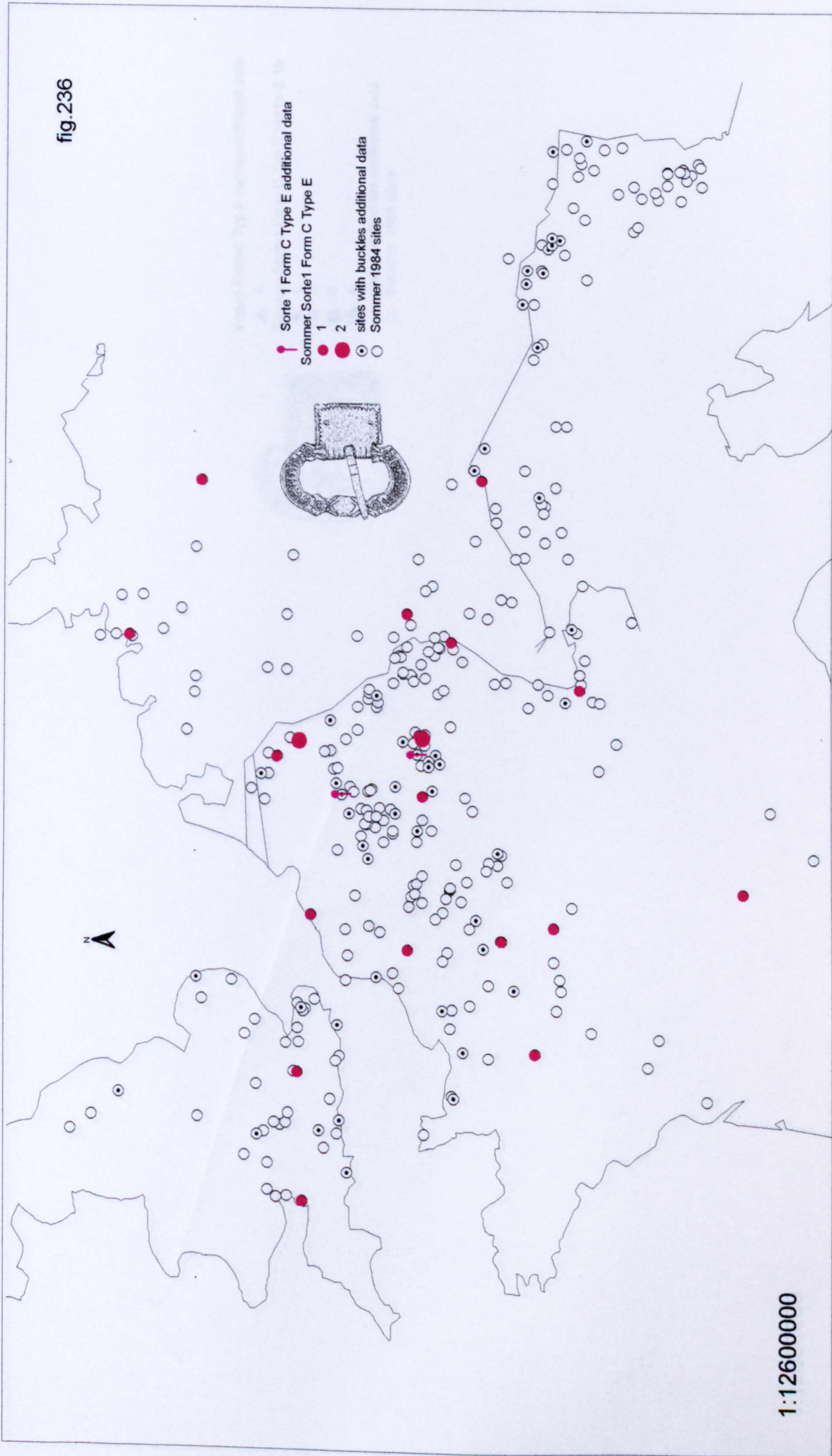


fig.236

1:12600000



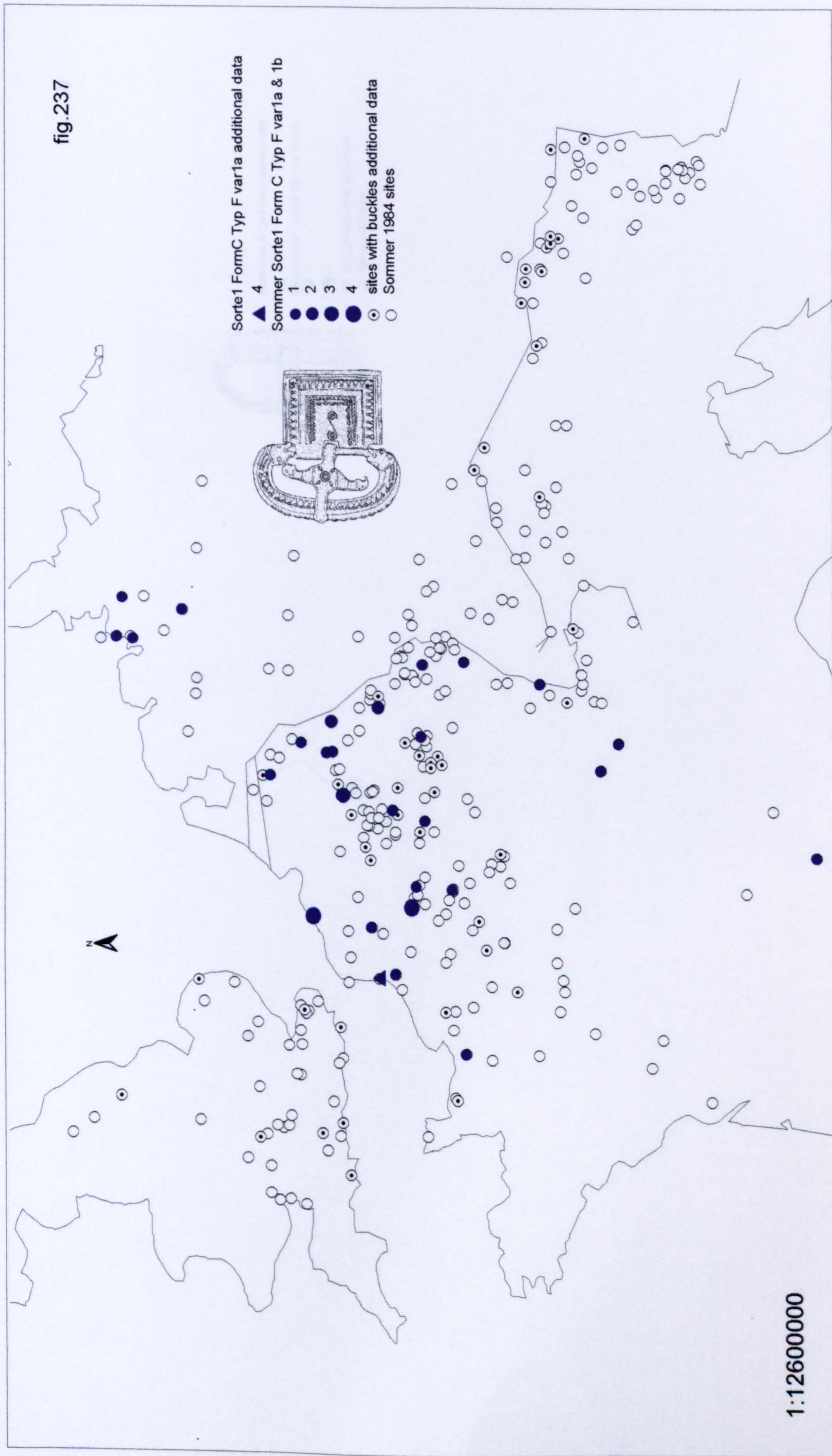


fig.237

1:12600000



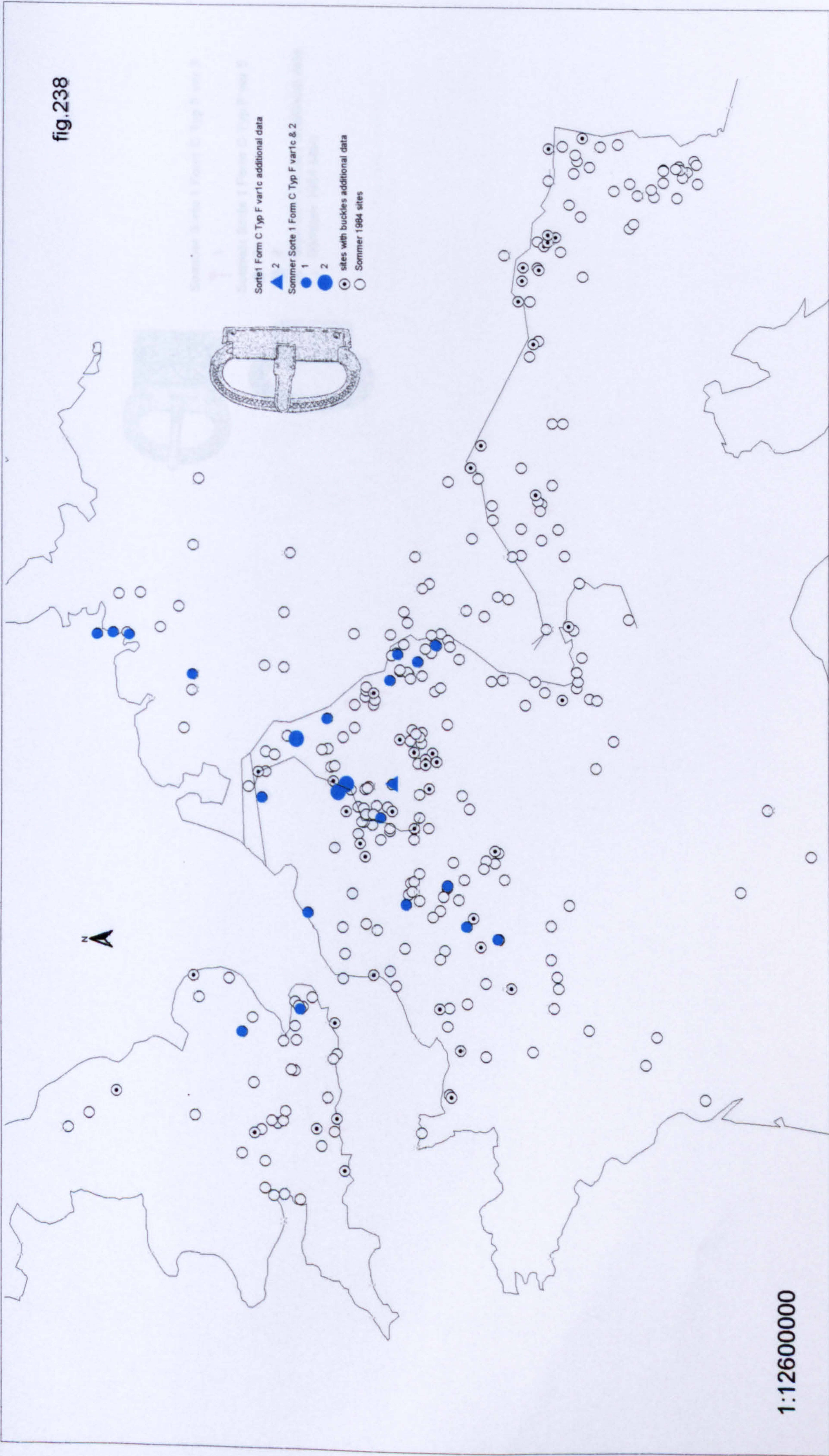
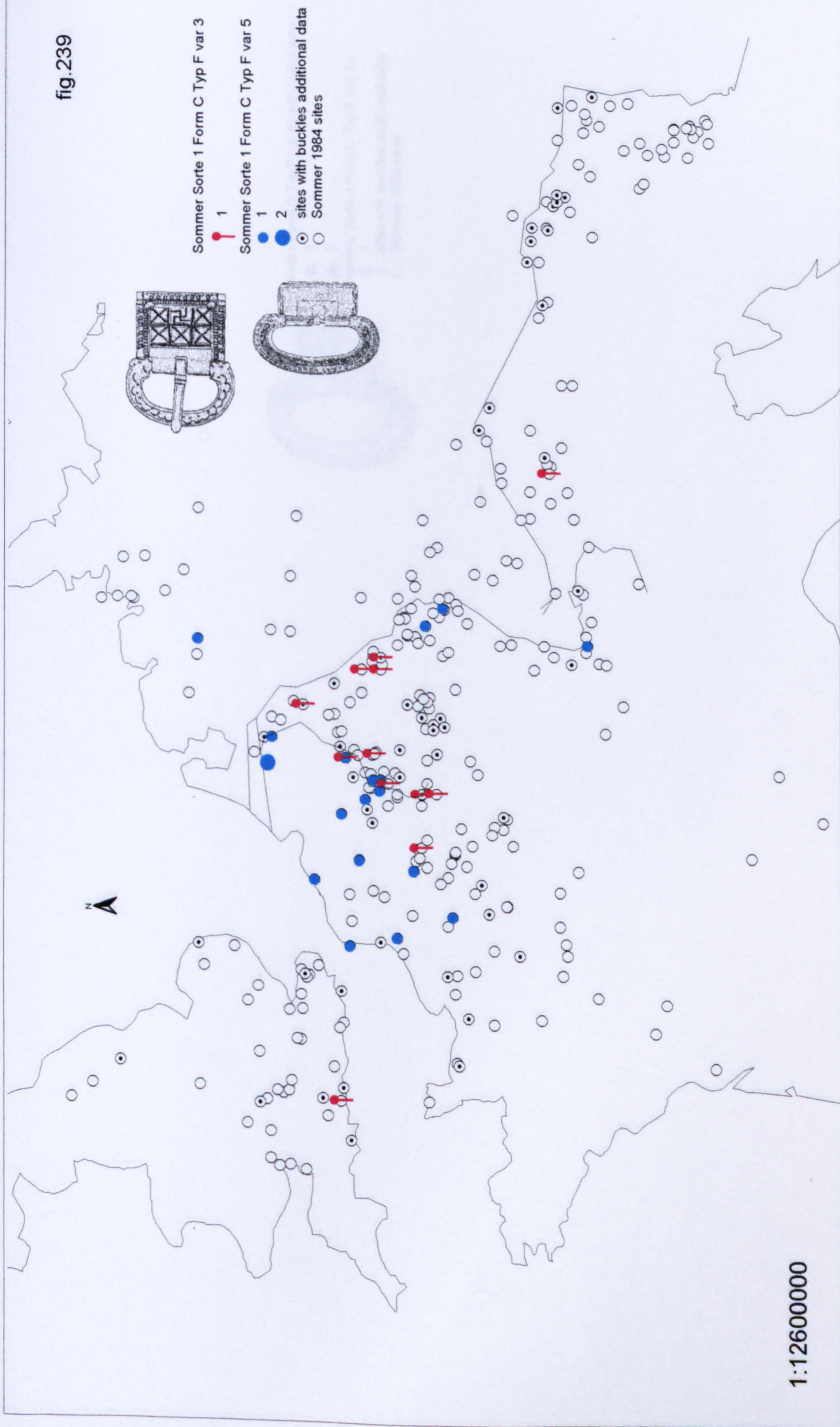




fig.239



1:12600000



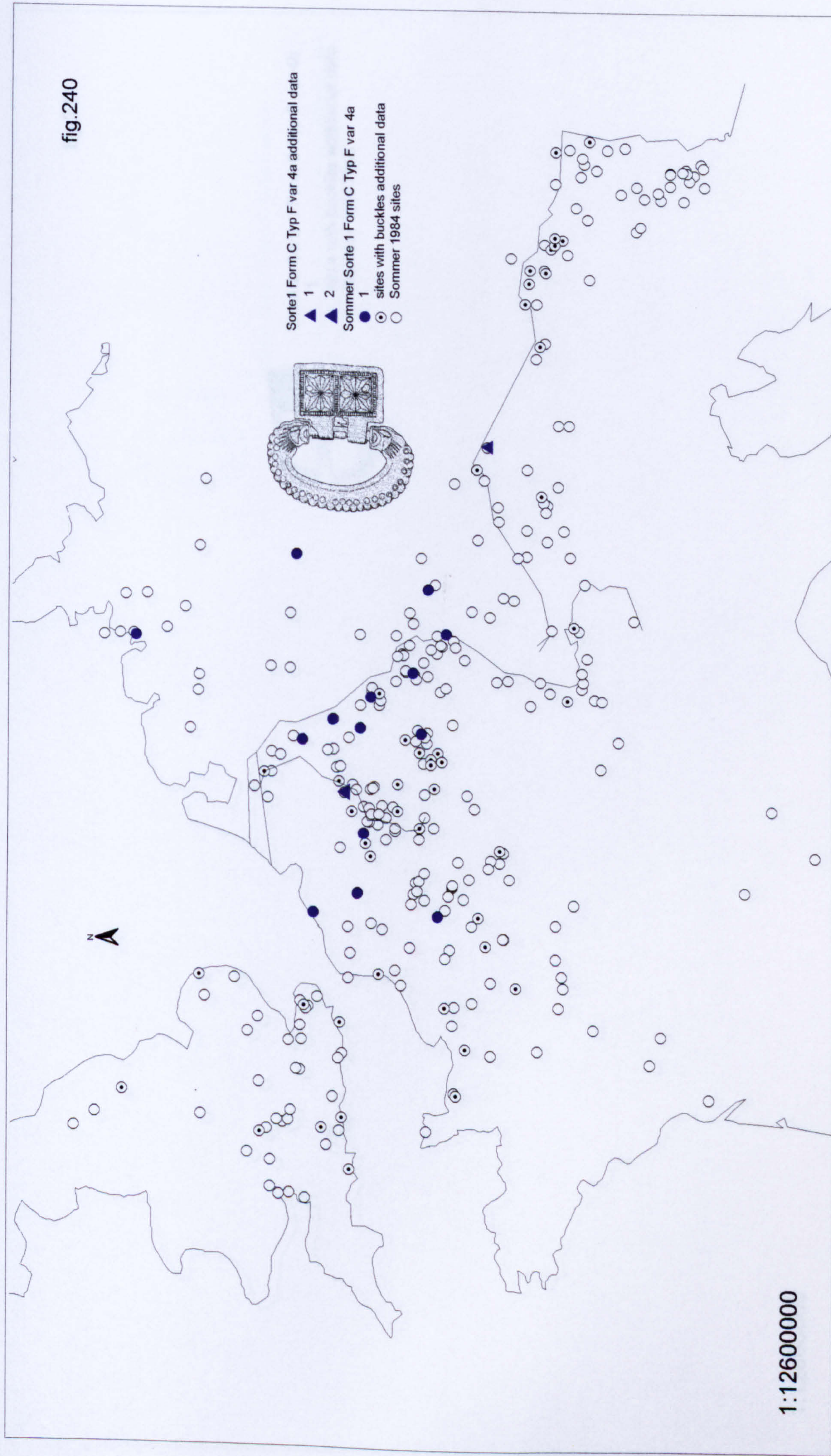


fig.240



fig.241

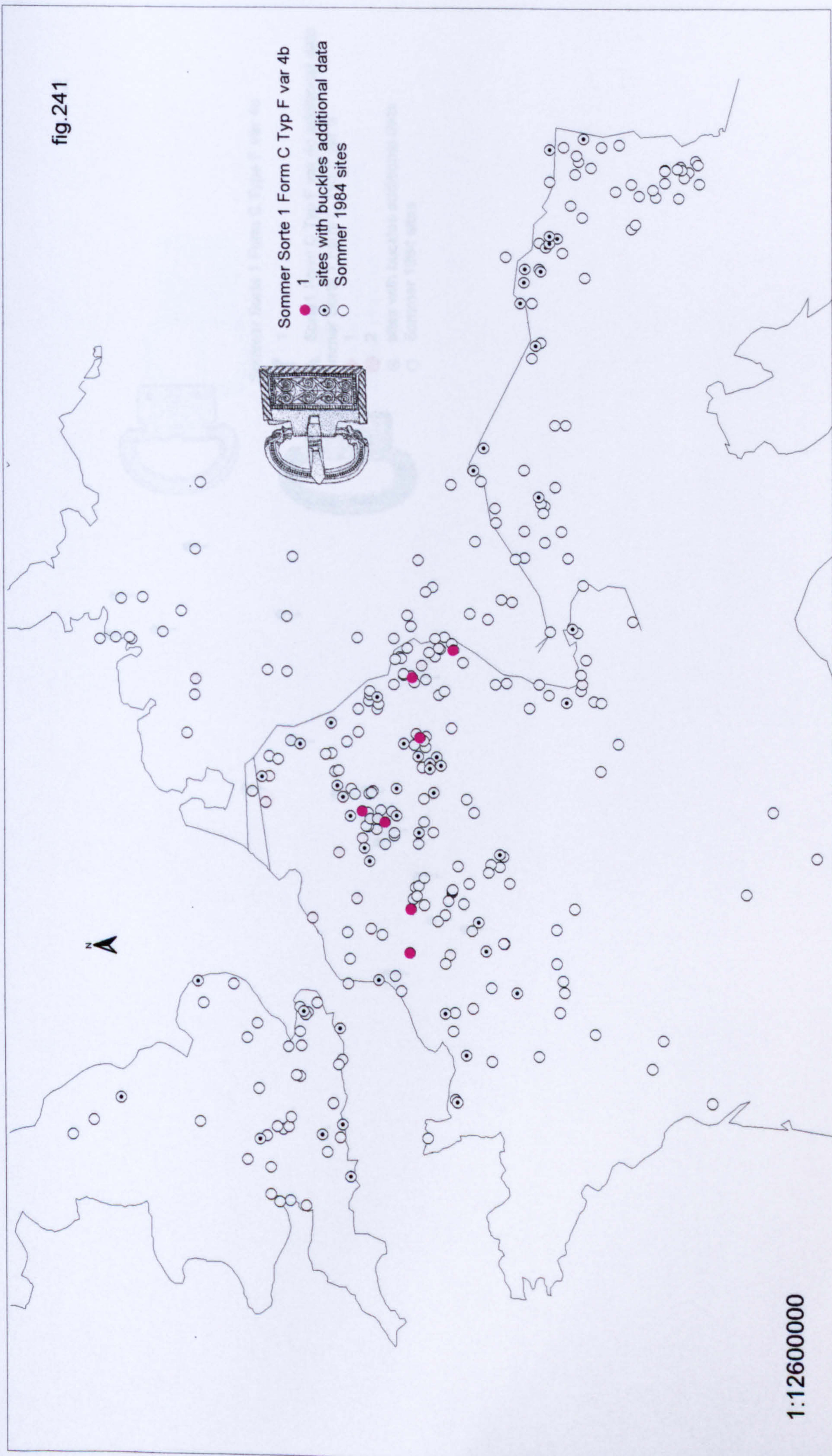




fig.242





fig.243

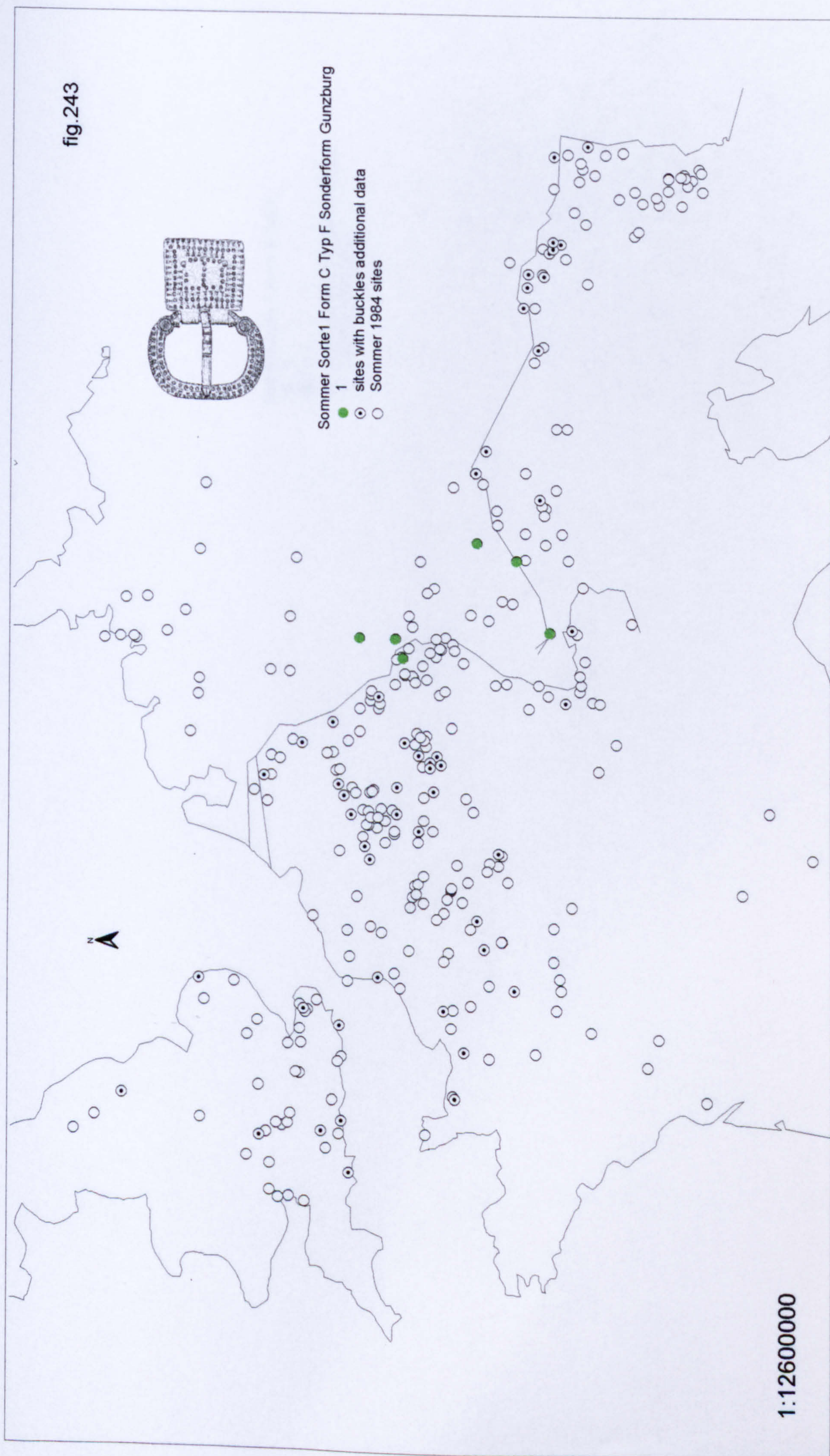






fig.244

- Sommer Sorte 1 Form E Typ A
- 1
  - 2
  - sites with buckles additional data
  - Sommer 1984 sites

1:12600000



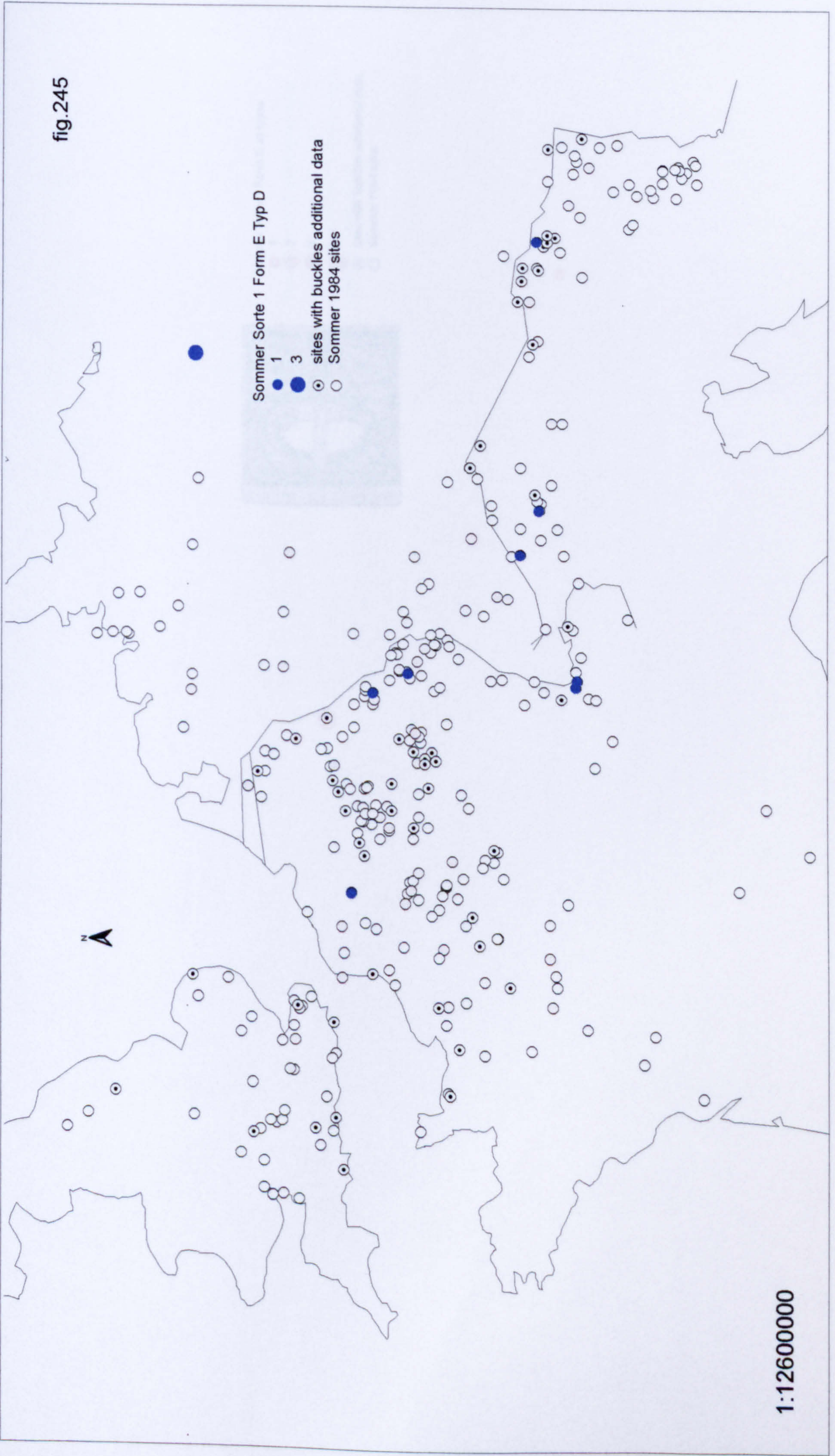


fig.245



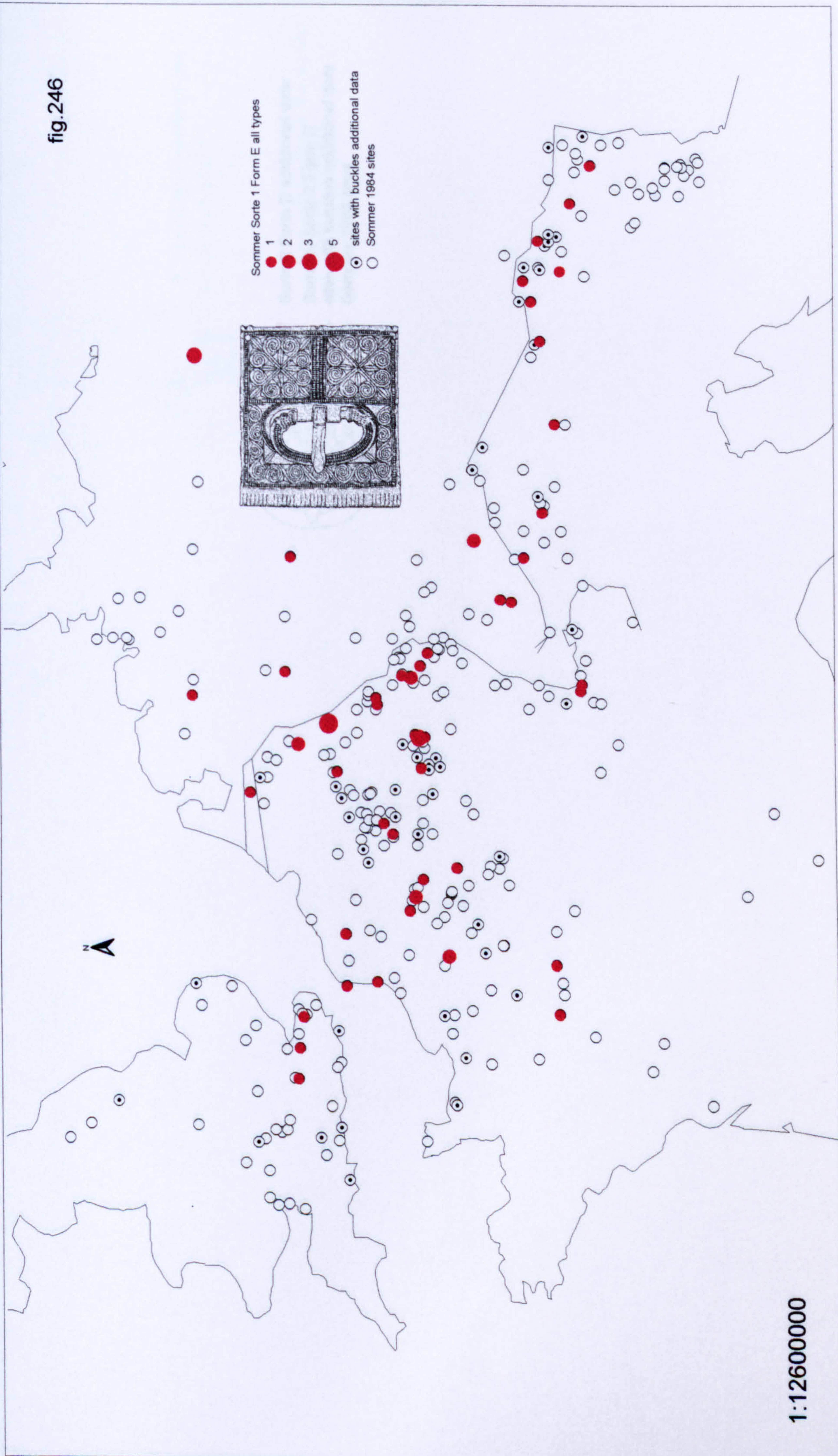
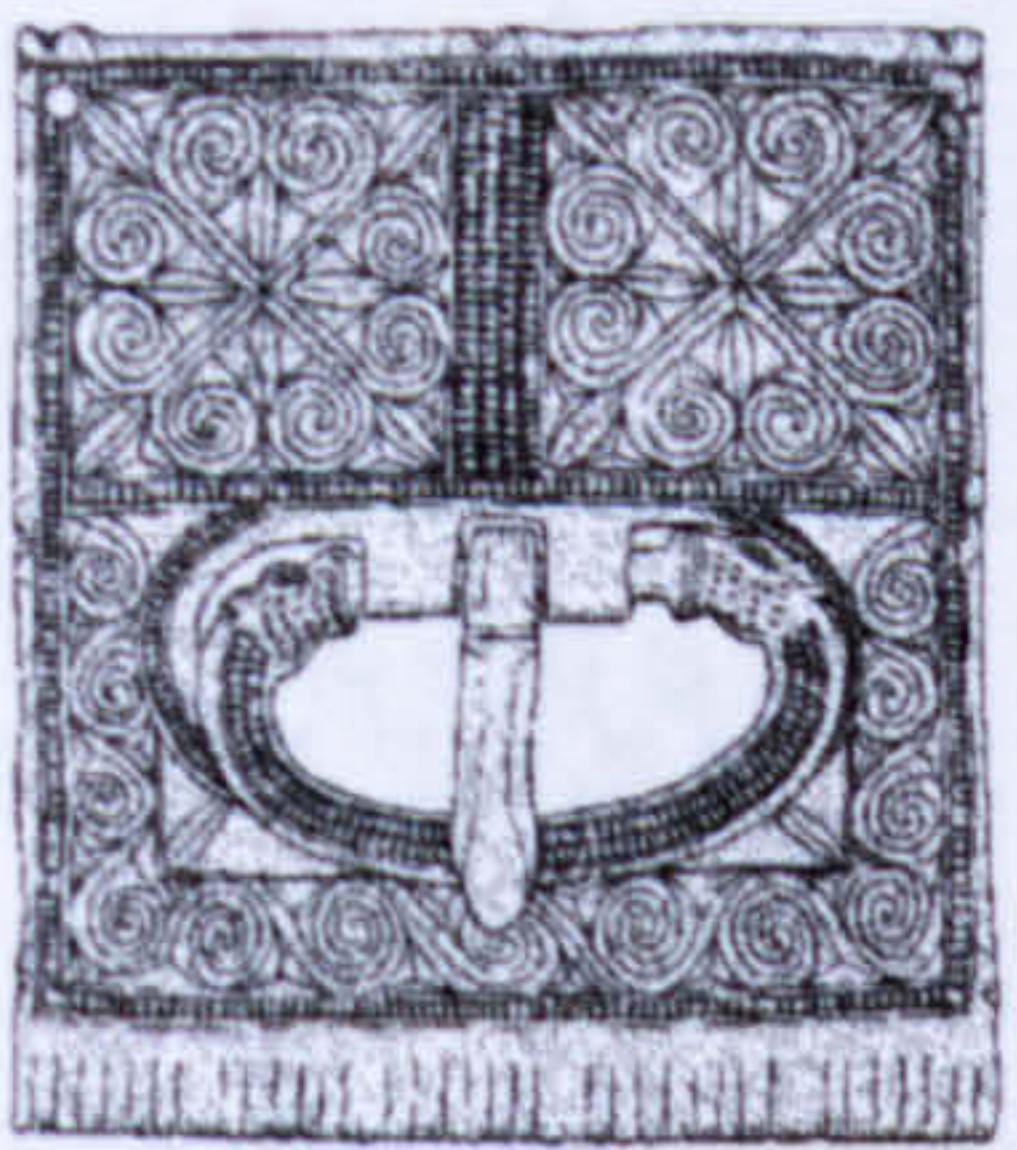


fig.246

Sommer Sorte 1 Form E all types  
1 2 3 5  
sites with buckles additional data  
Sommer 1984 sites



1:12600000



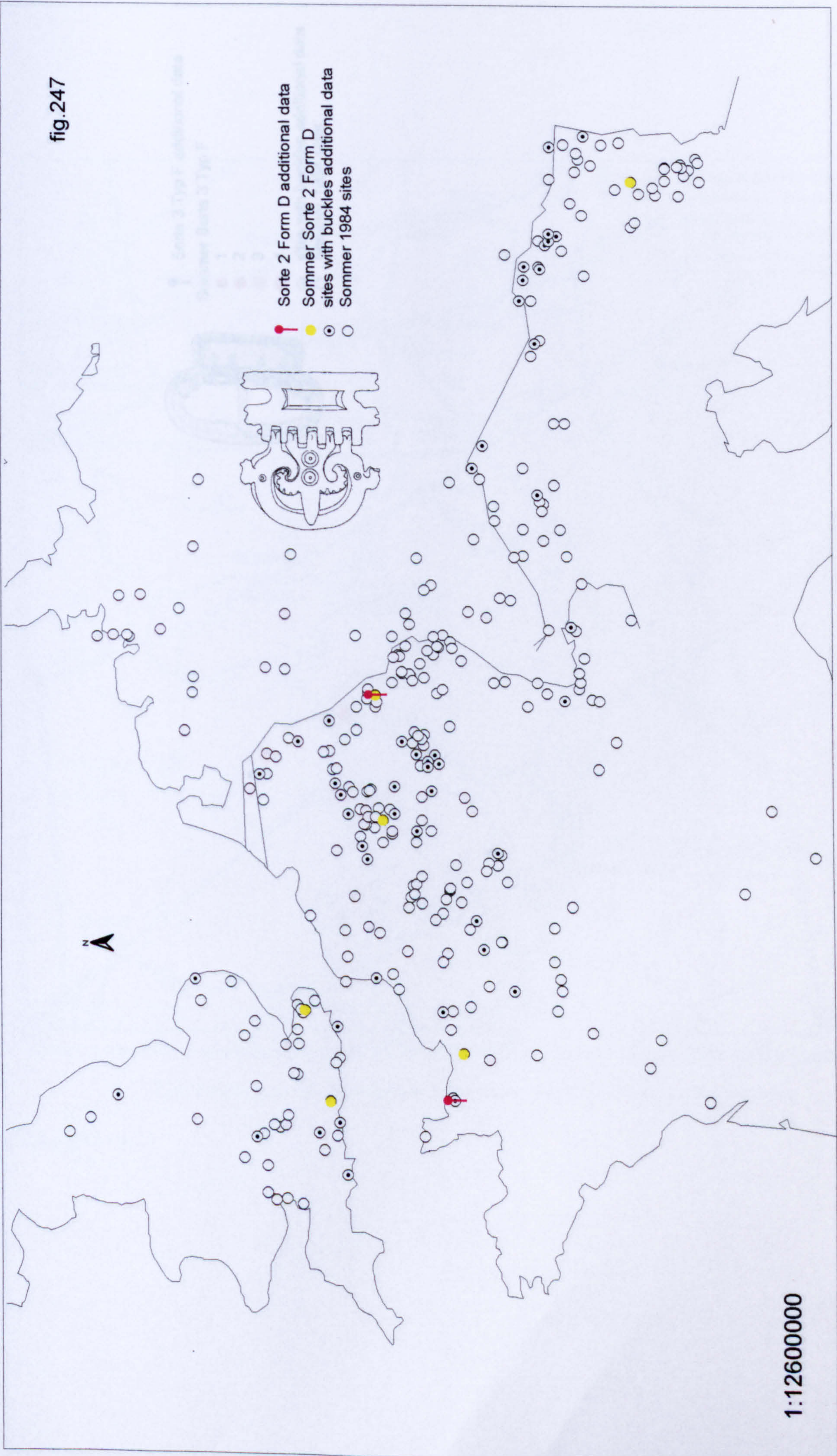


fig.247

1:12600000



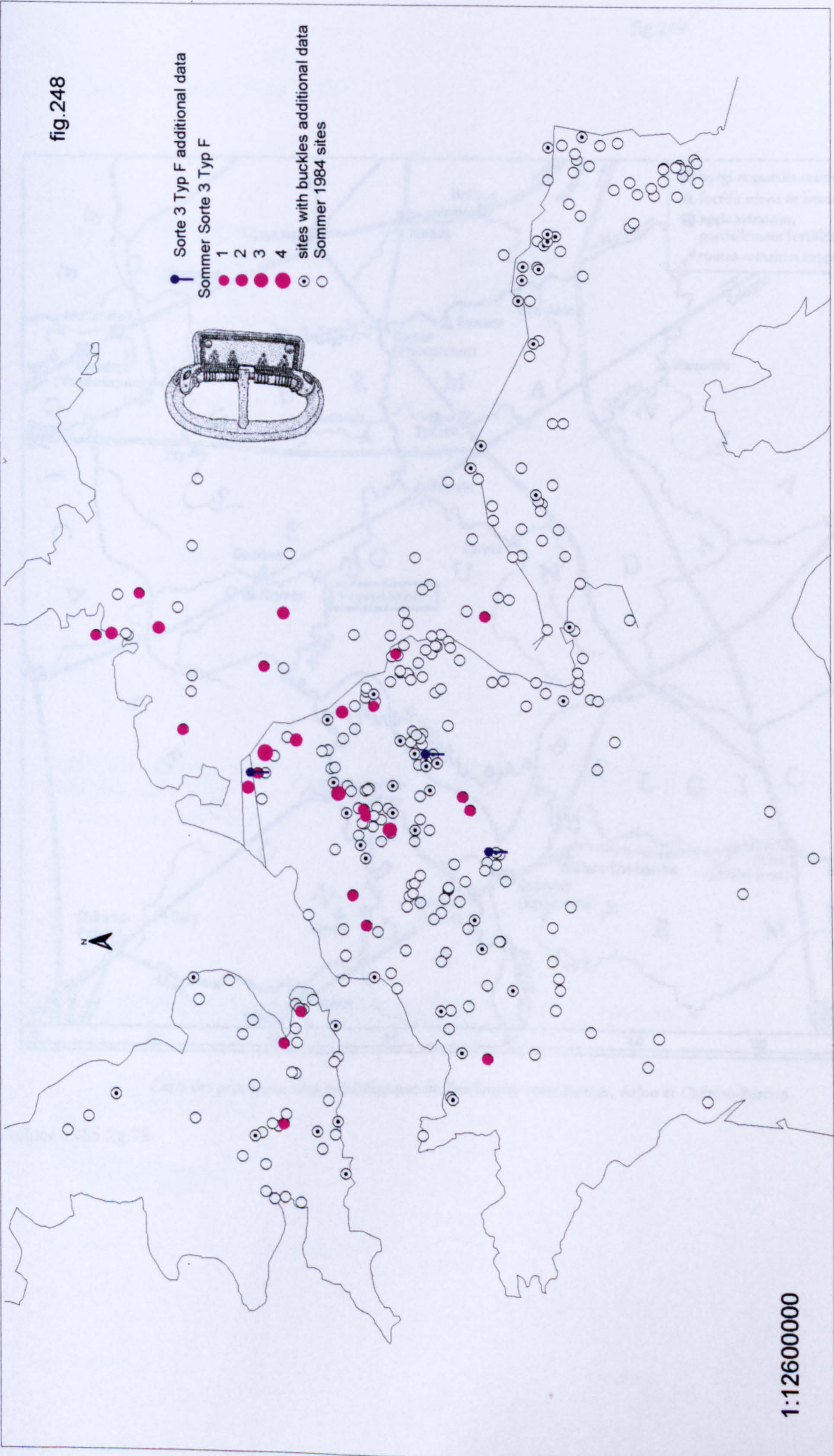
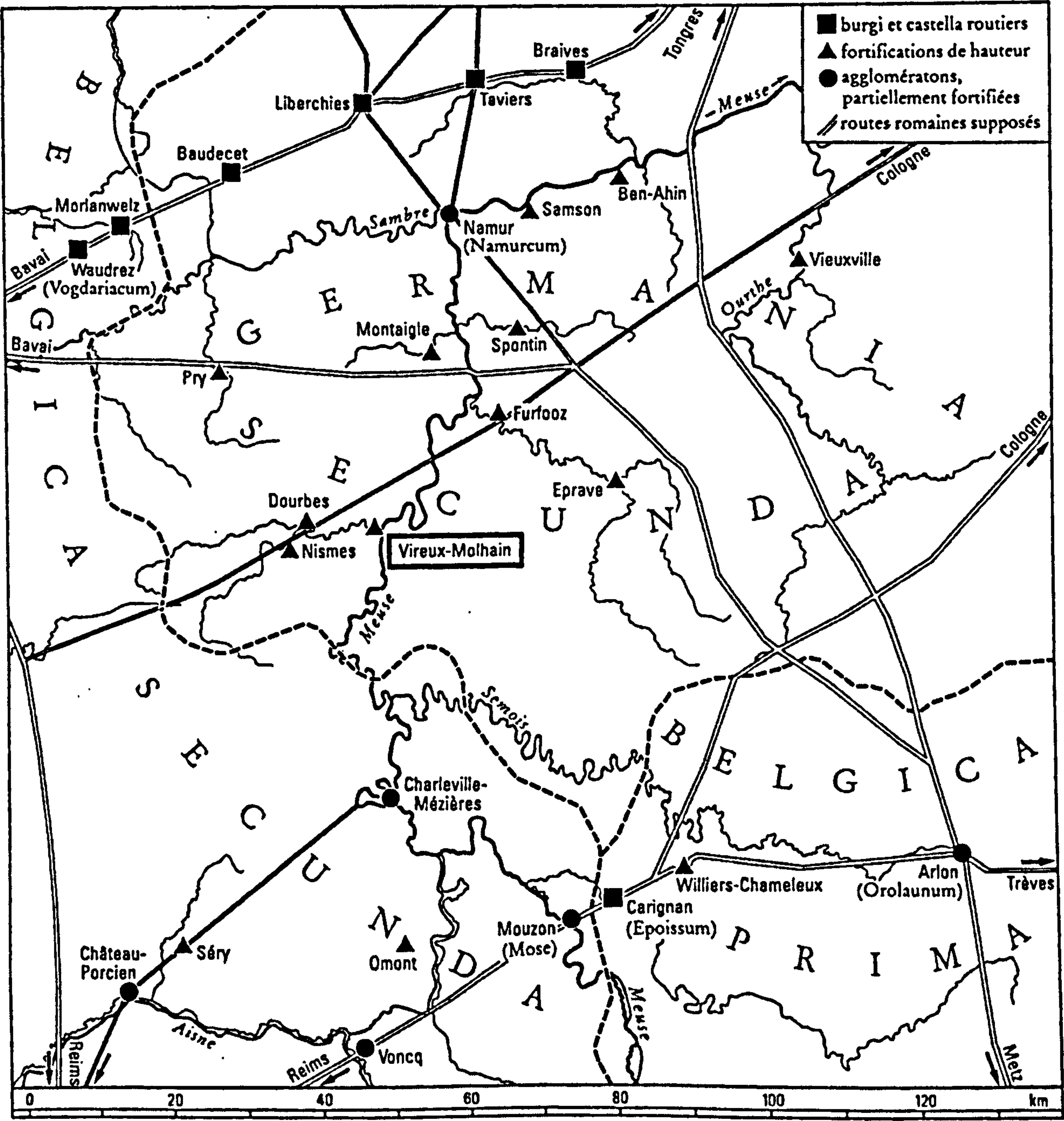


fig.248

1:12600000



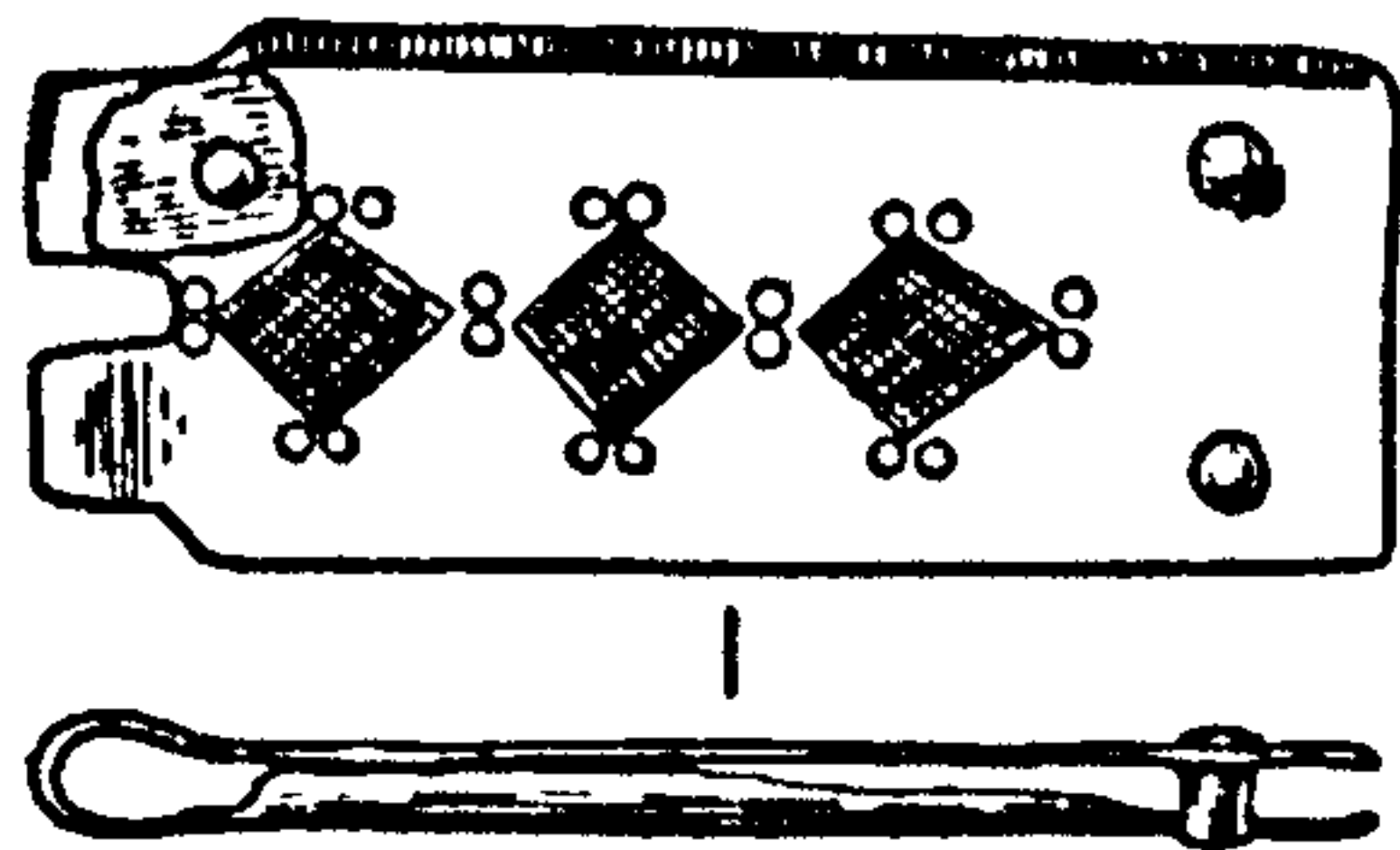


Carte des principaux sites archéologiques du Bas-Empire entre Namur, Arlon et Château-Porcien.

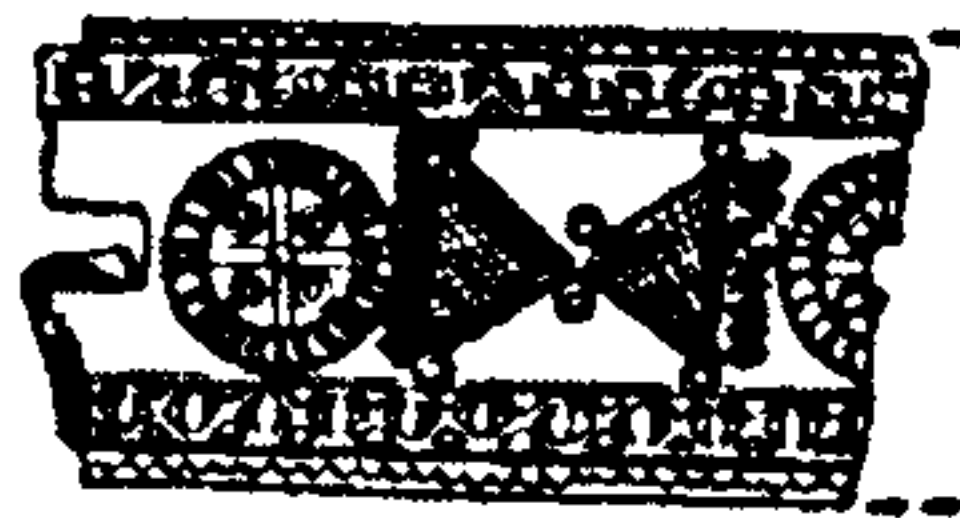
Böhme 1985 fig.78



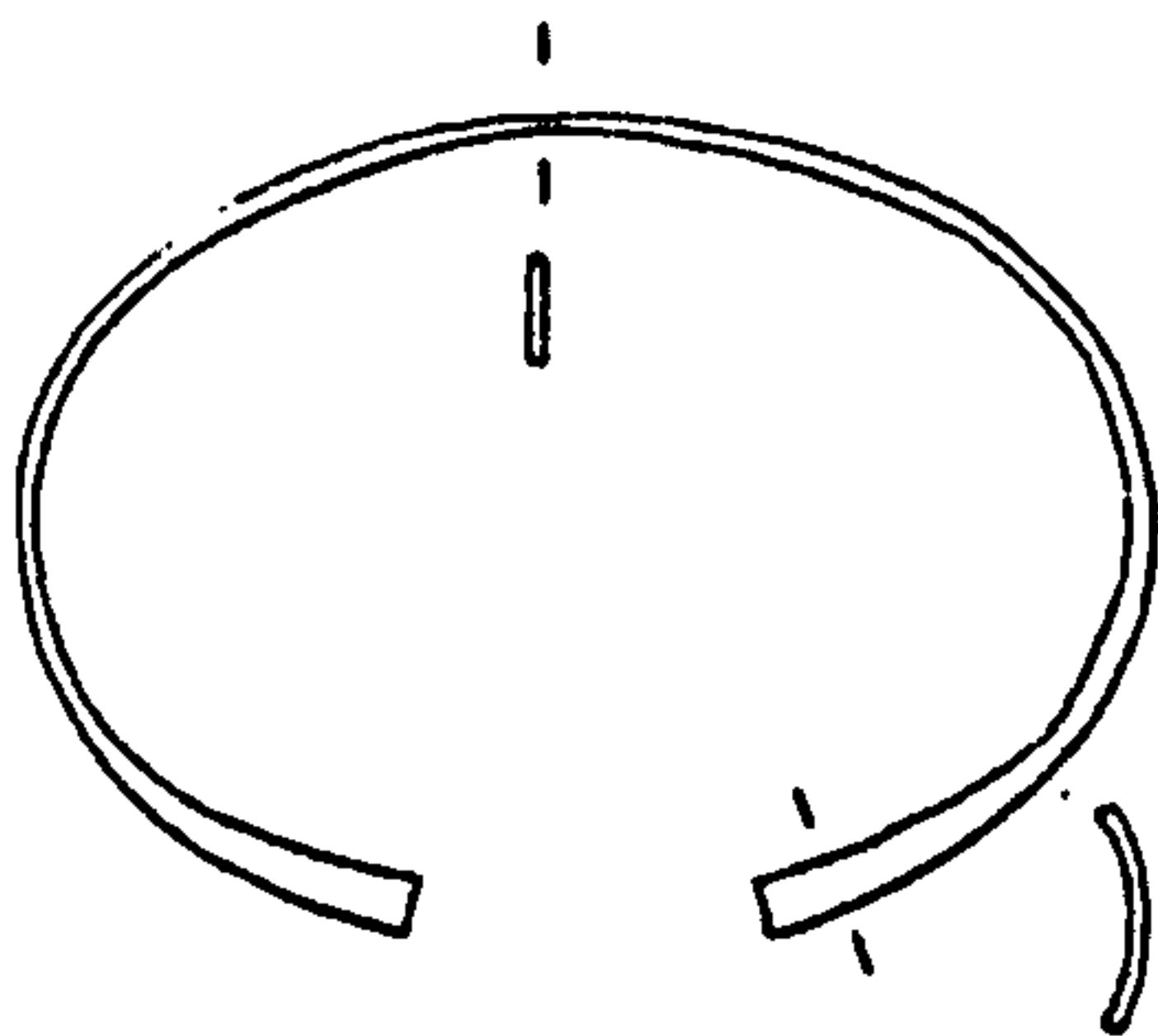
Links between bracelet and buckle decoration



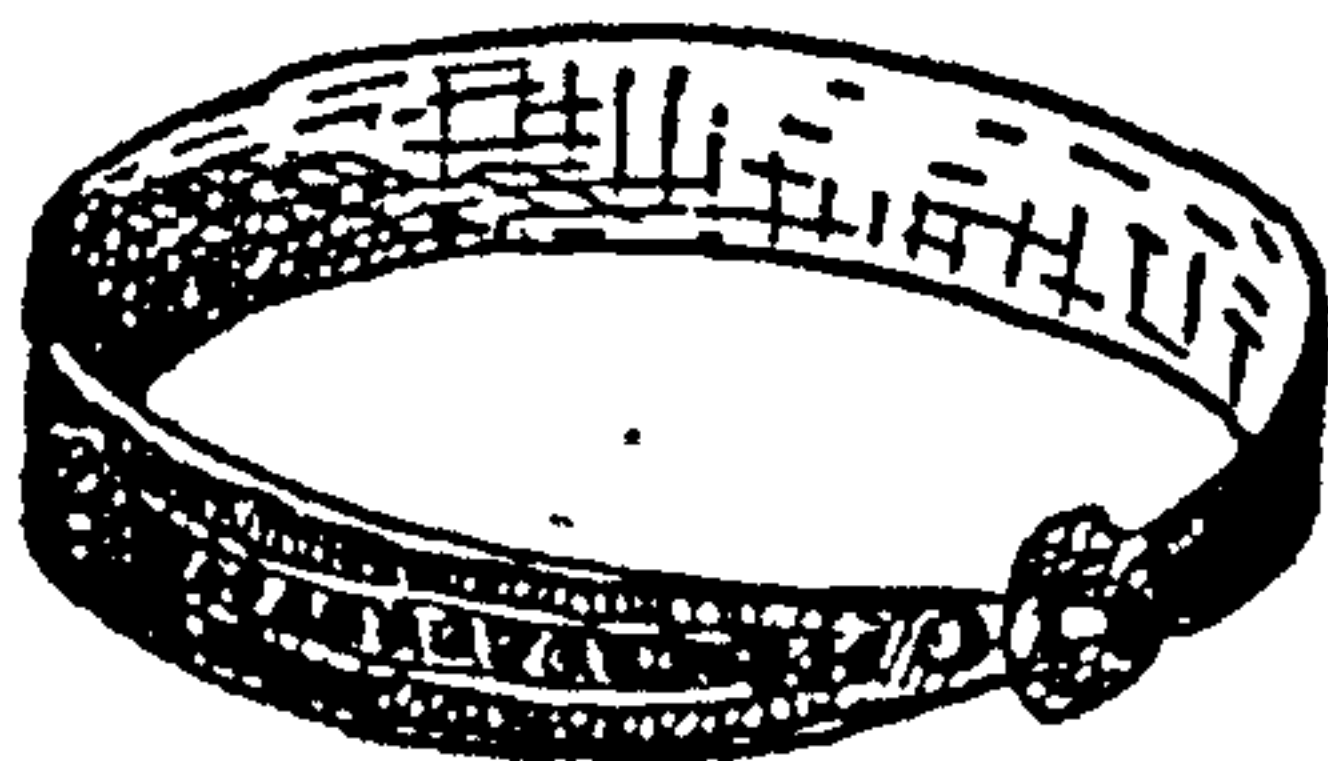
Popham  
Hawkes & Dunning 1961 fig.15 p



Silchester  
Hawkes & Dunning 1961 fig.15 q



Augst Riha 1990 taf.17 521



Damery    Brisson et al 1969 pl.III 15

at varying scales



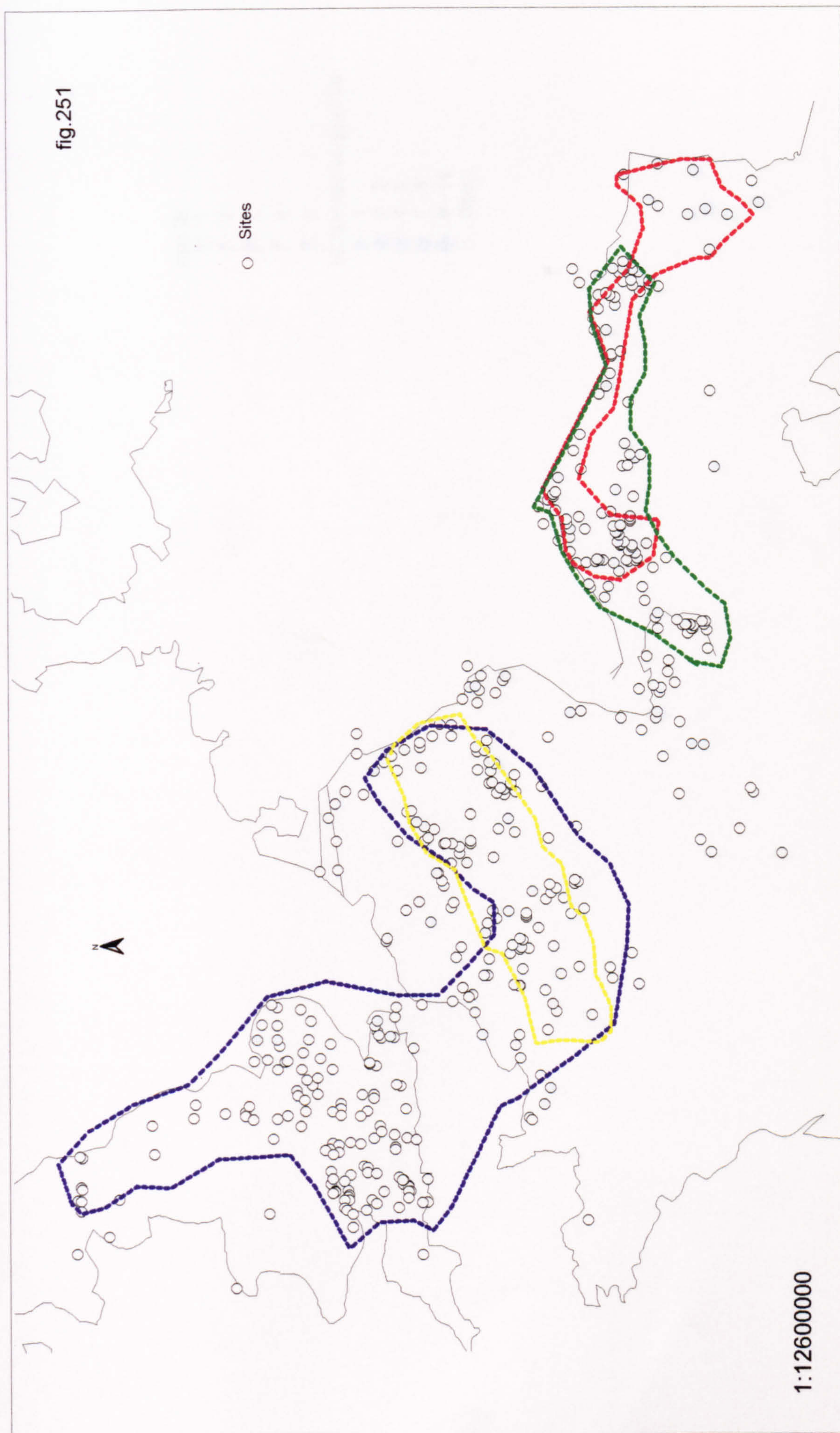


fig.251

○ Sites

1:12600000



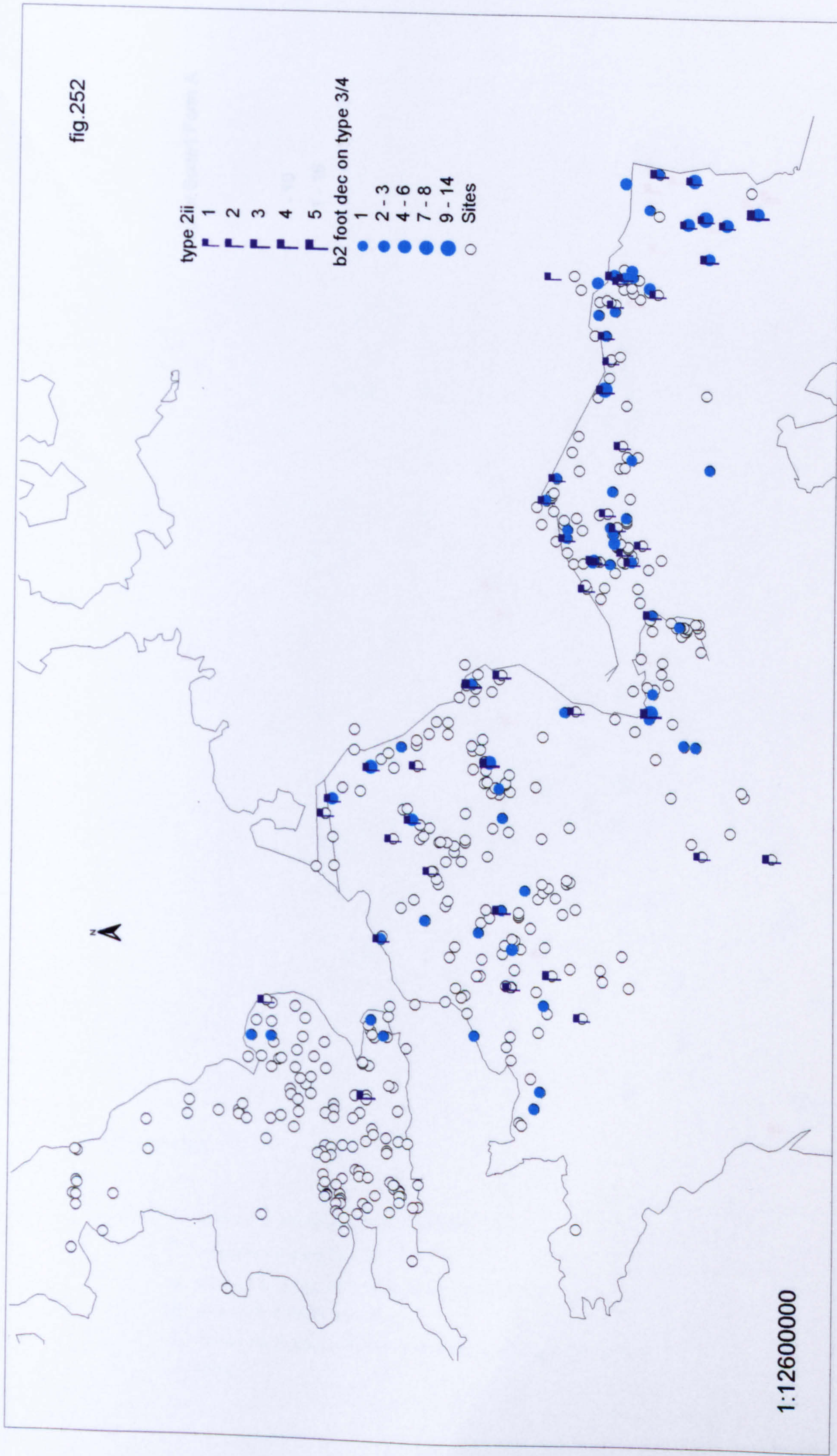


fig.252

- type 2ii
- 1
  - 2
  - 3
  - 4
  - 5
- b2 foot dec on type 3/4
- 1
  - 2 - 3
  - 4 - 6
  - 7 - 8
  - 9 - 14
- Sites
- 1
  - Sites

1:12600000



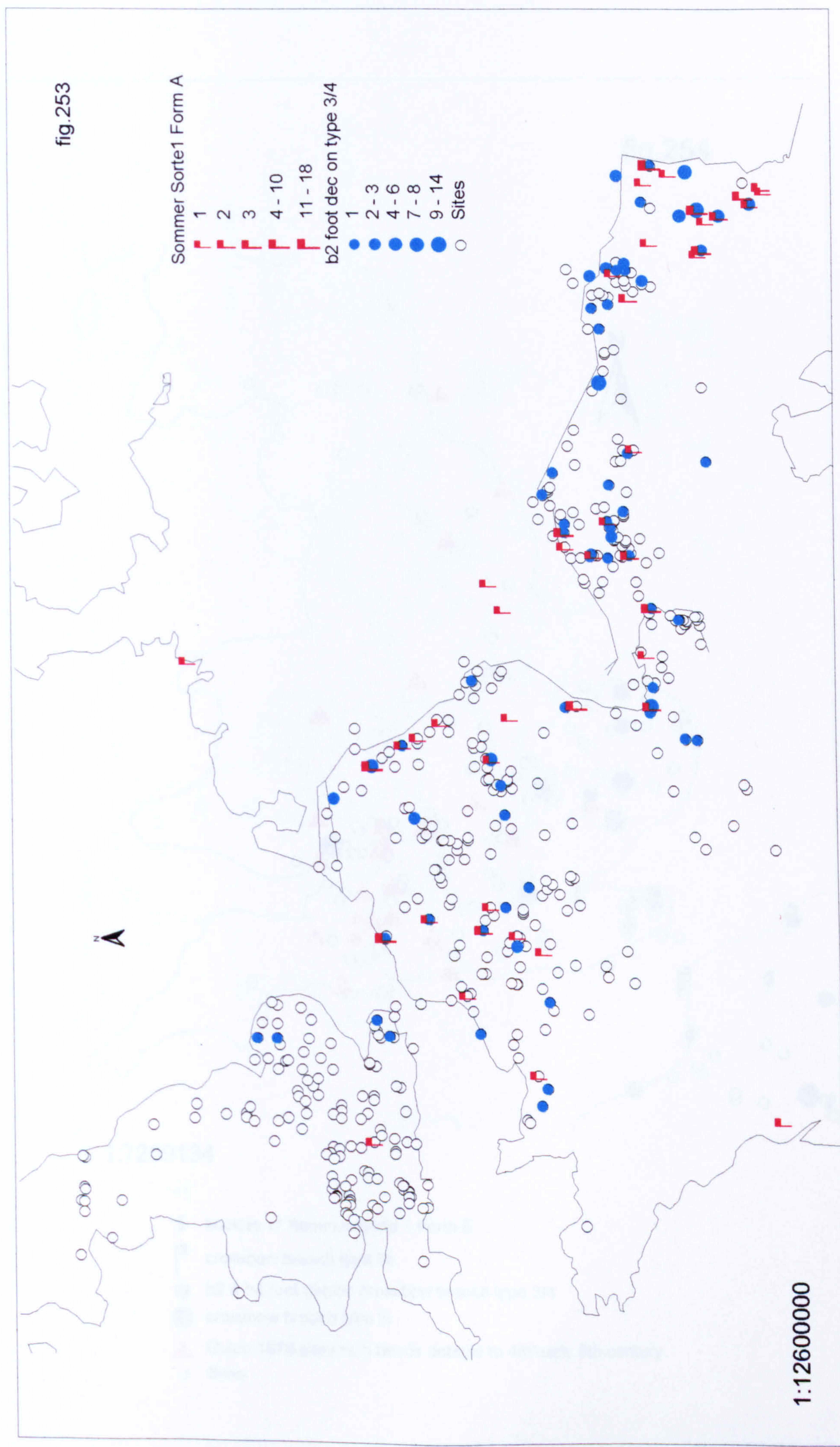


fig.253

Sommer Sorte1 Form A

- 1
- 2
- 3
- 4 - 10
- 11 - 18

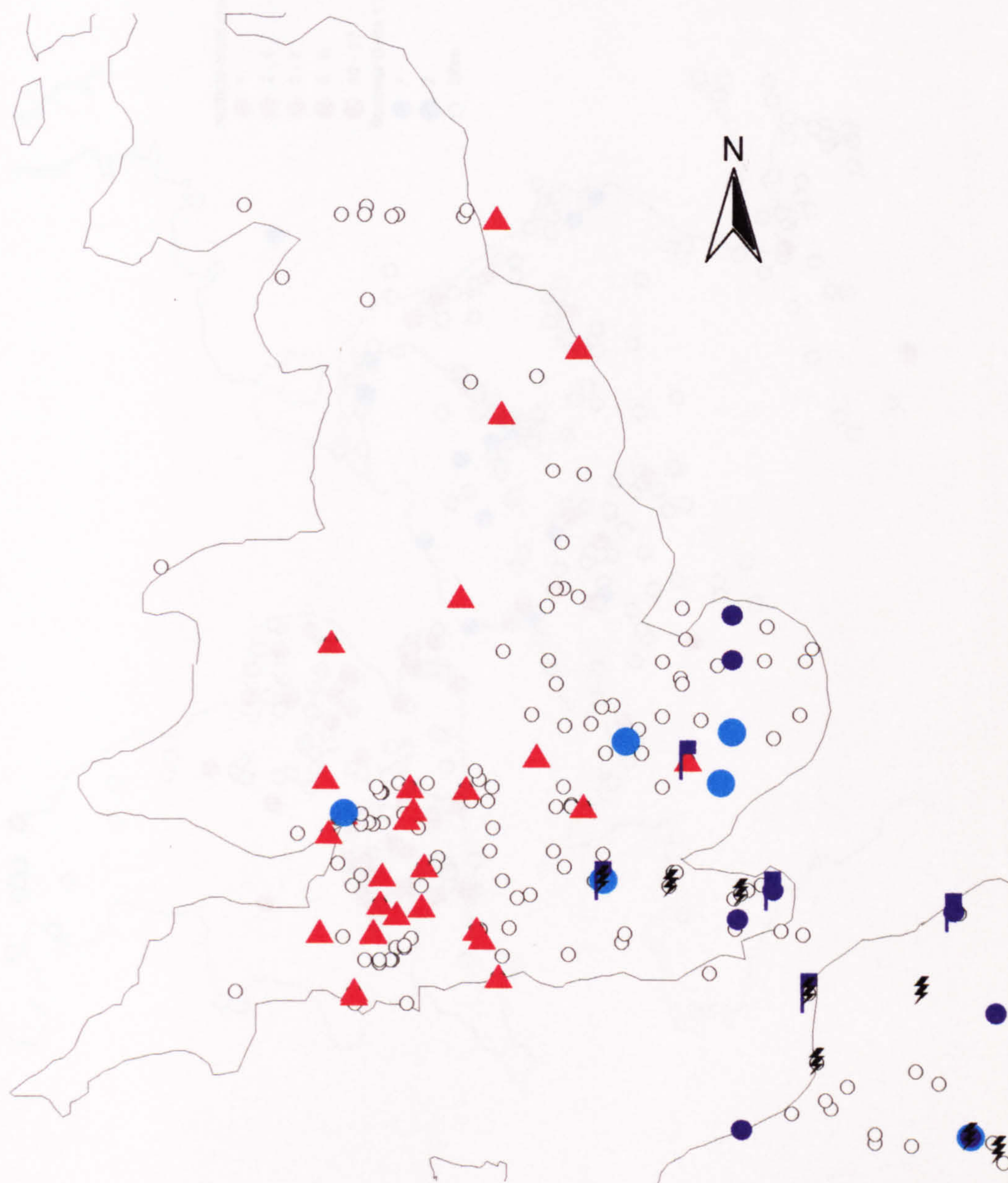
b2 foot dec on type 3/4

- 1
- 2 - 3
- 4 - 6
- 7 - 8
- 9 - 14
- Sites

1:12600000



fig.254

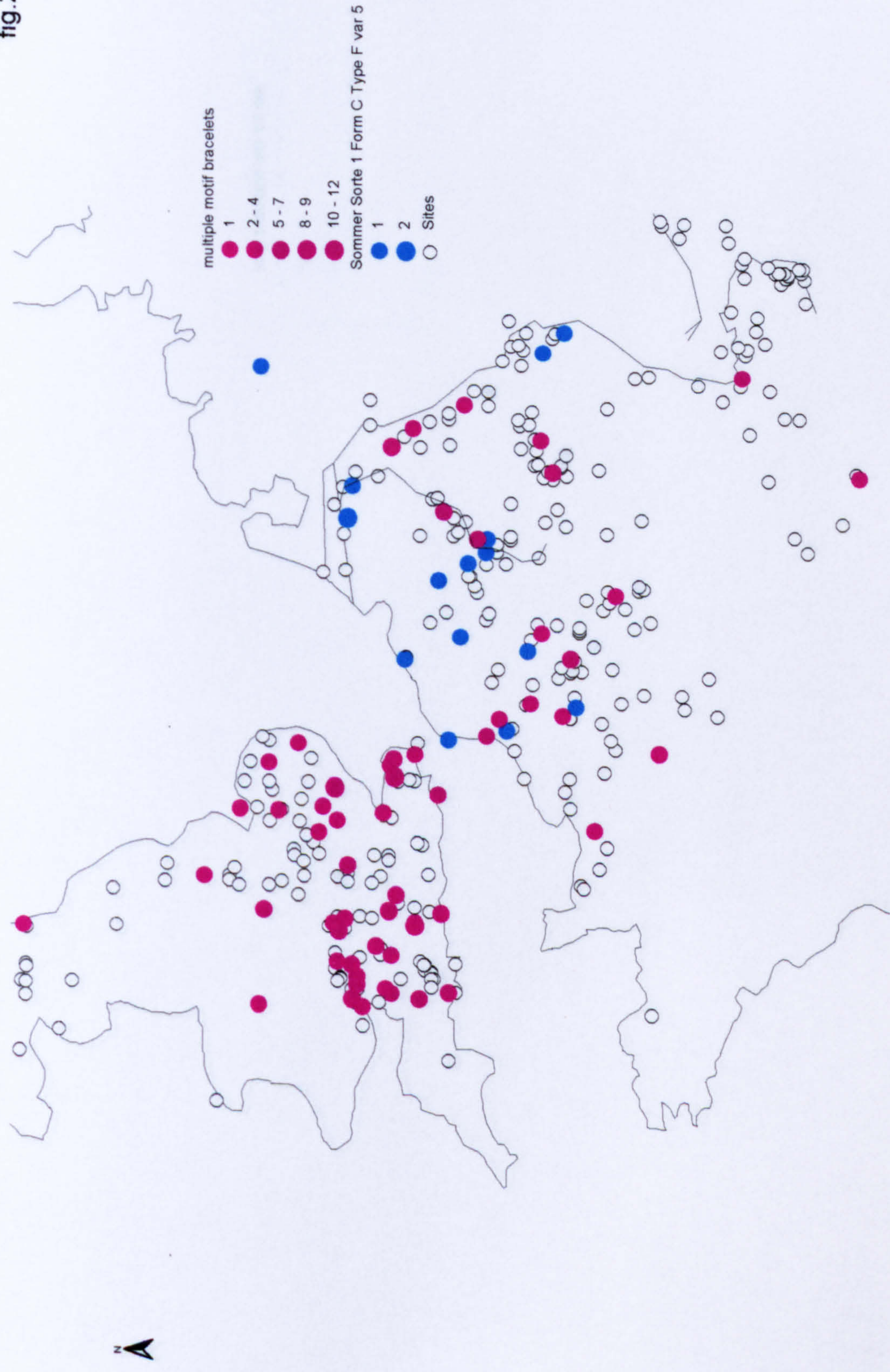


1:7299134

- ⚡ buckles of Sommer Sorte 1 Form E
- ┐ crossbow brooch type 6ii
- b2 & b4 foot dec on crossbow brooch type 3/4
- crossbow brooch type 5i
- ▲ Guido 1978 sites with beads datable to 4th/early 5th century
- Sites



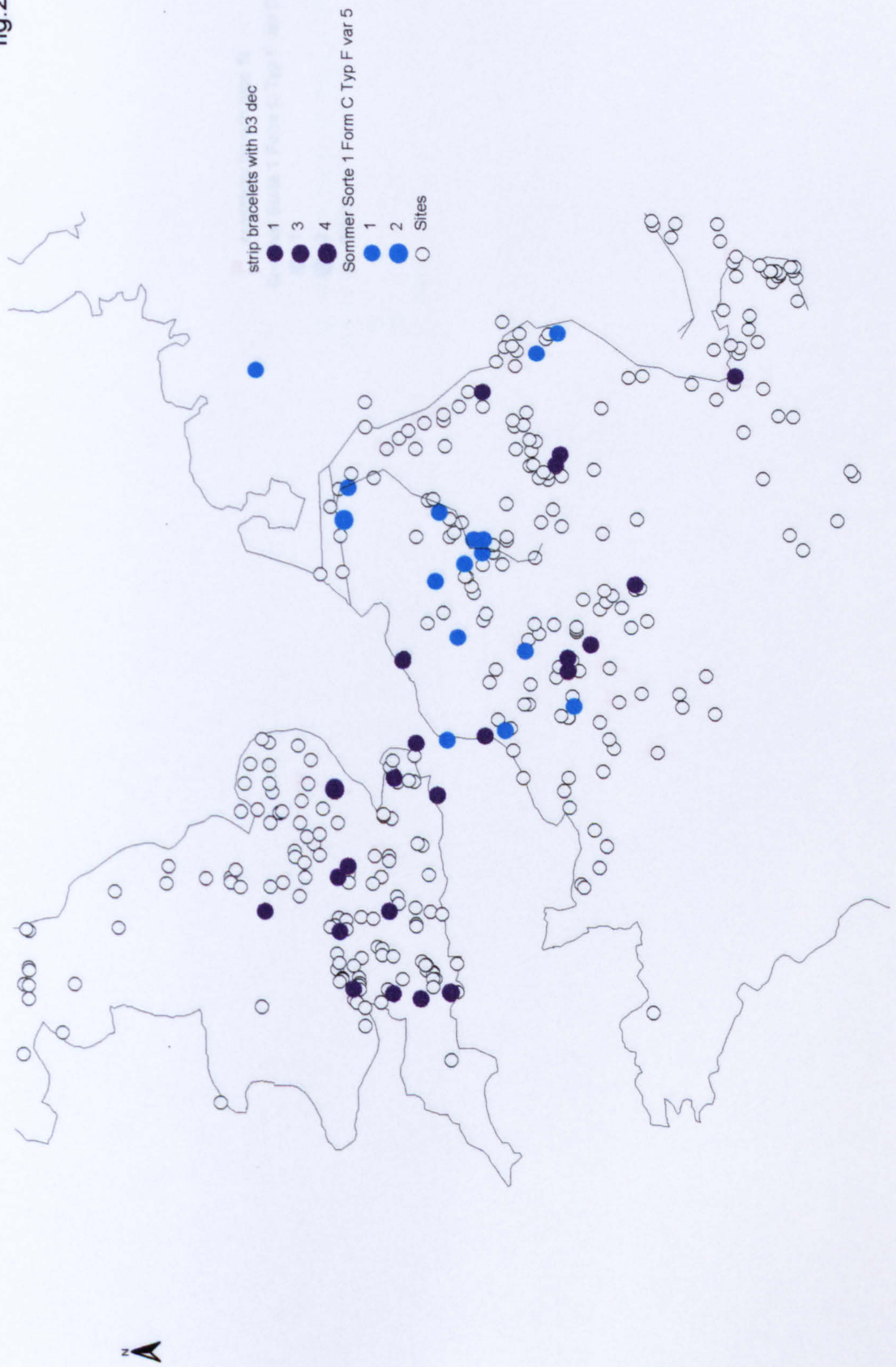
fig.255



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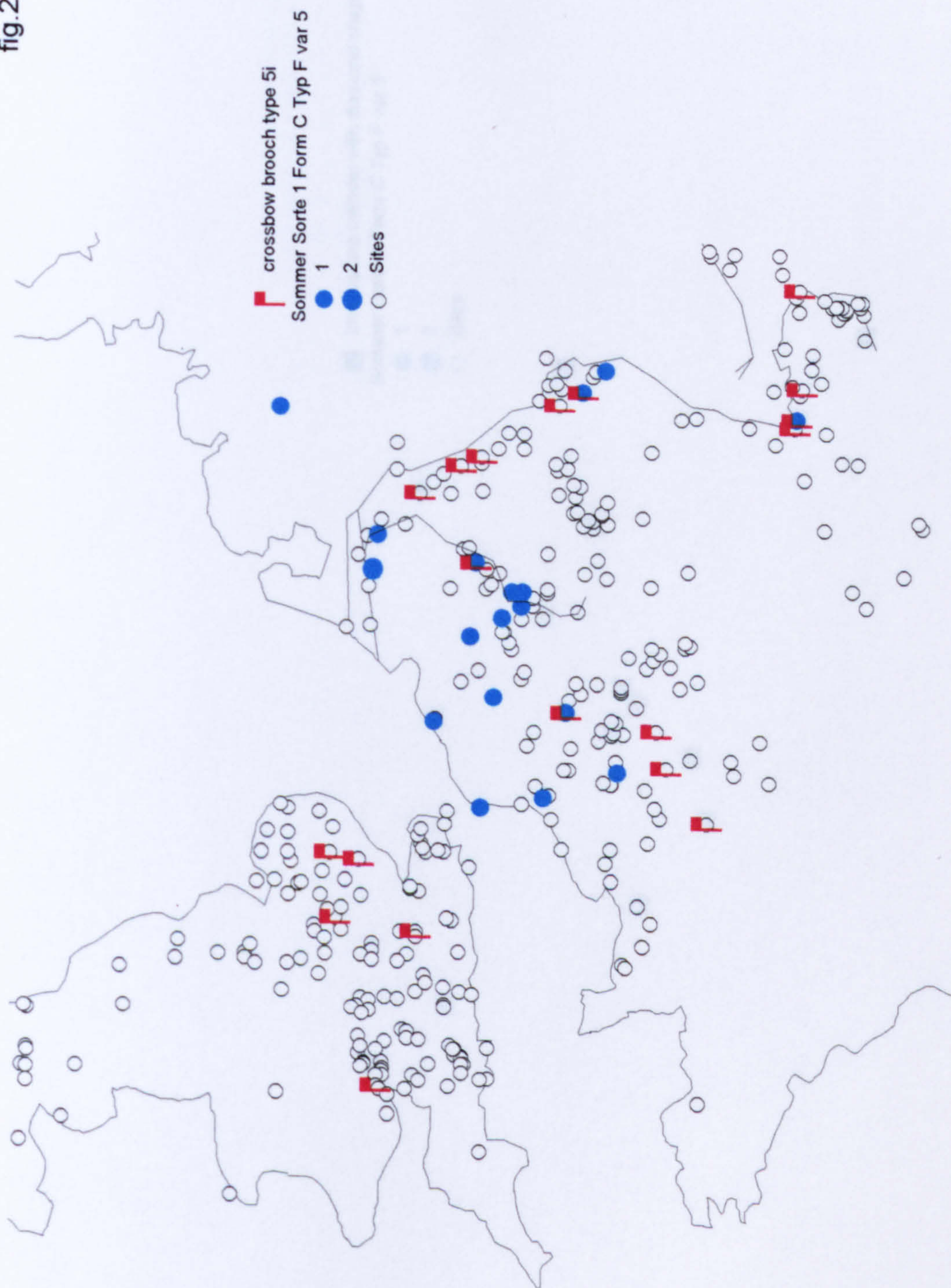
fig.256



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fig.257

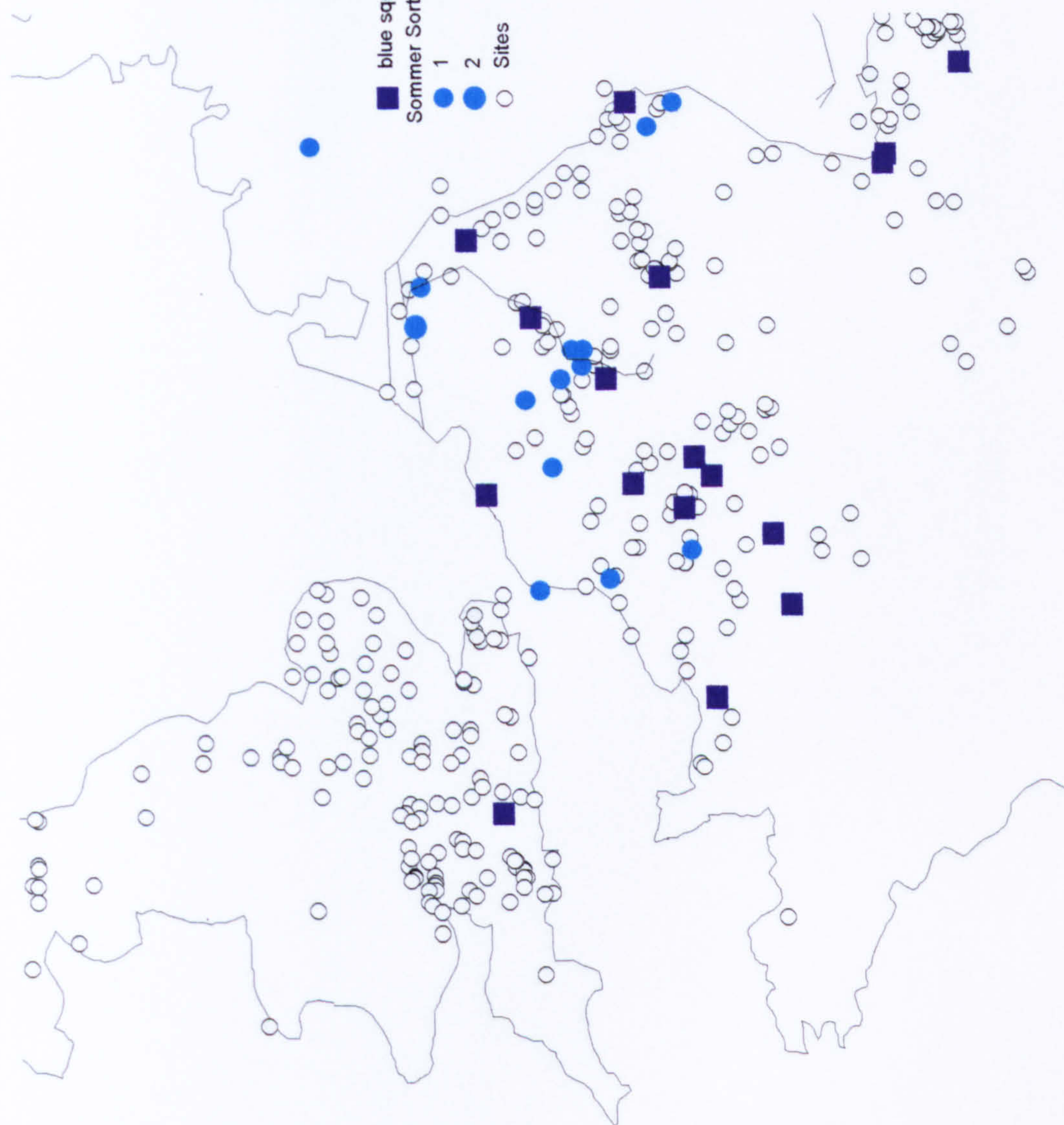


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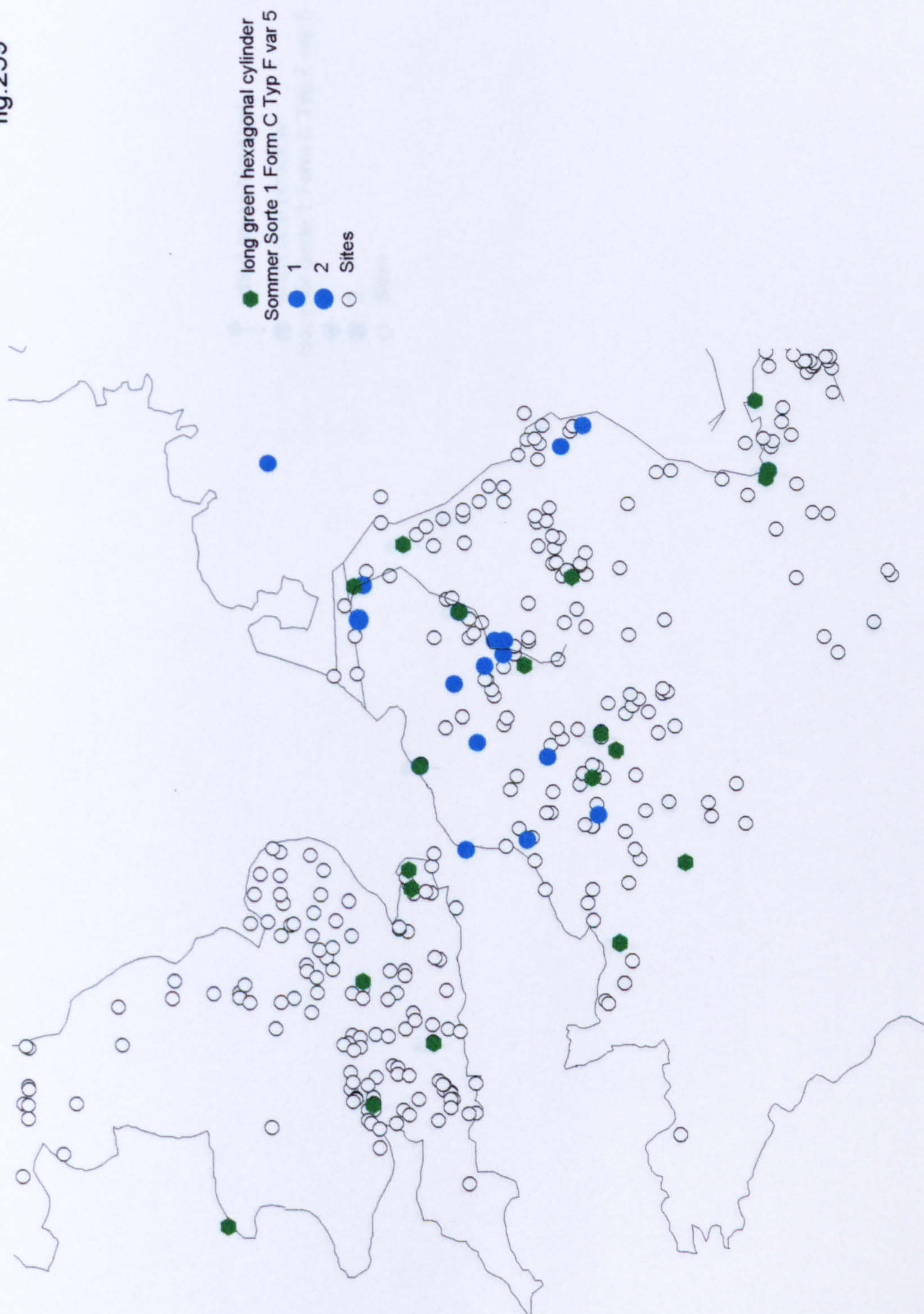
fig.258



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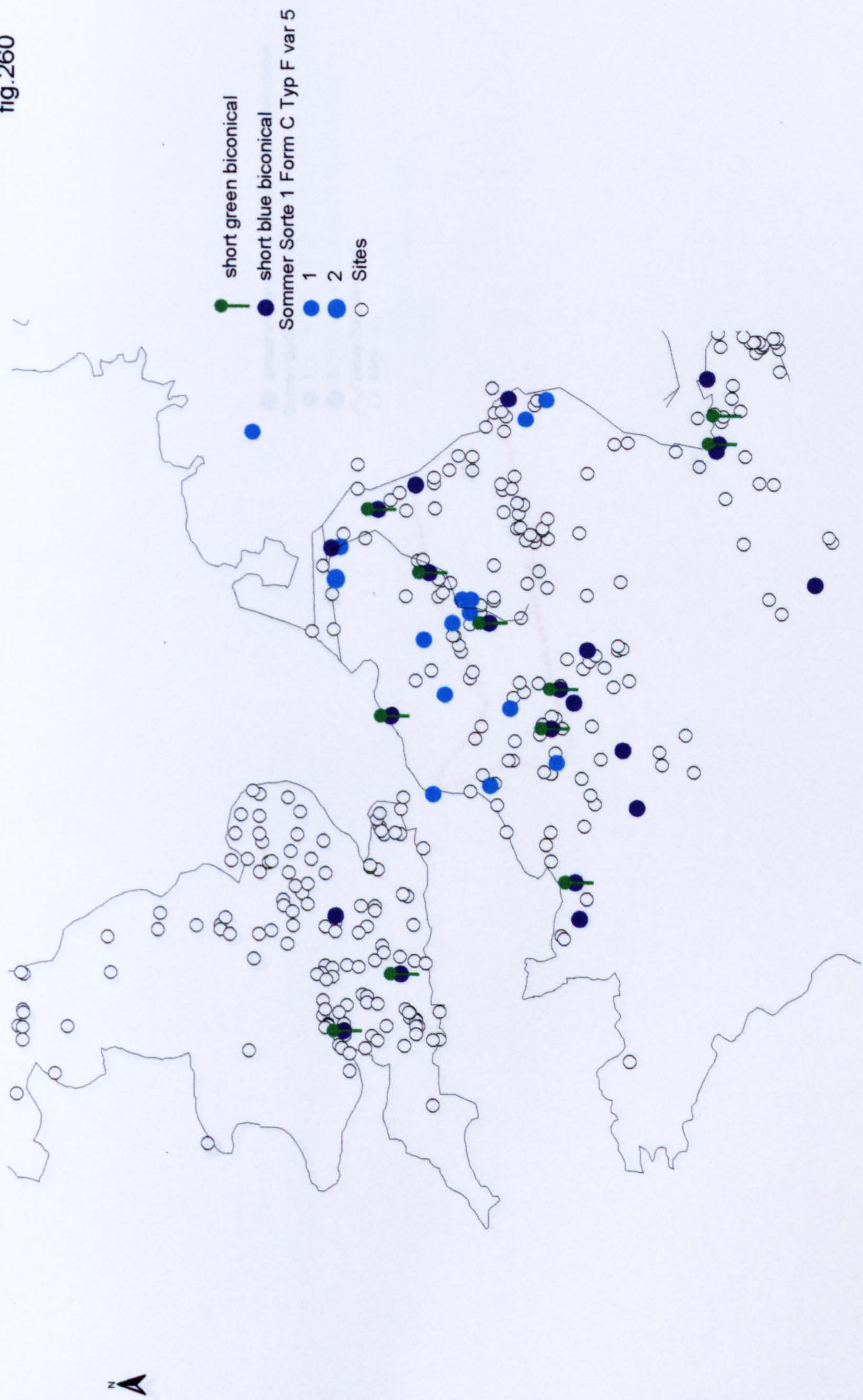
fig.259



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fig.260



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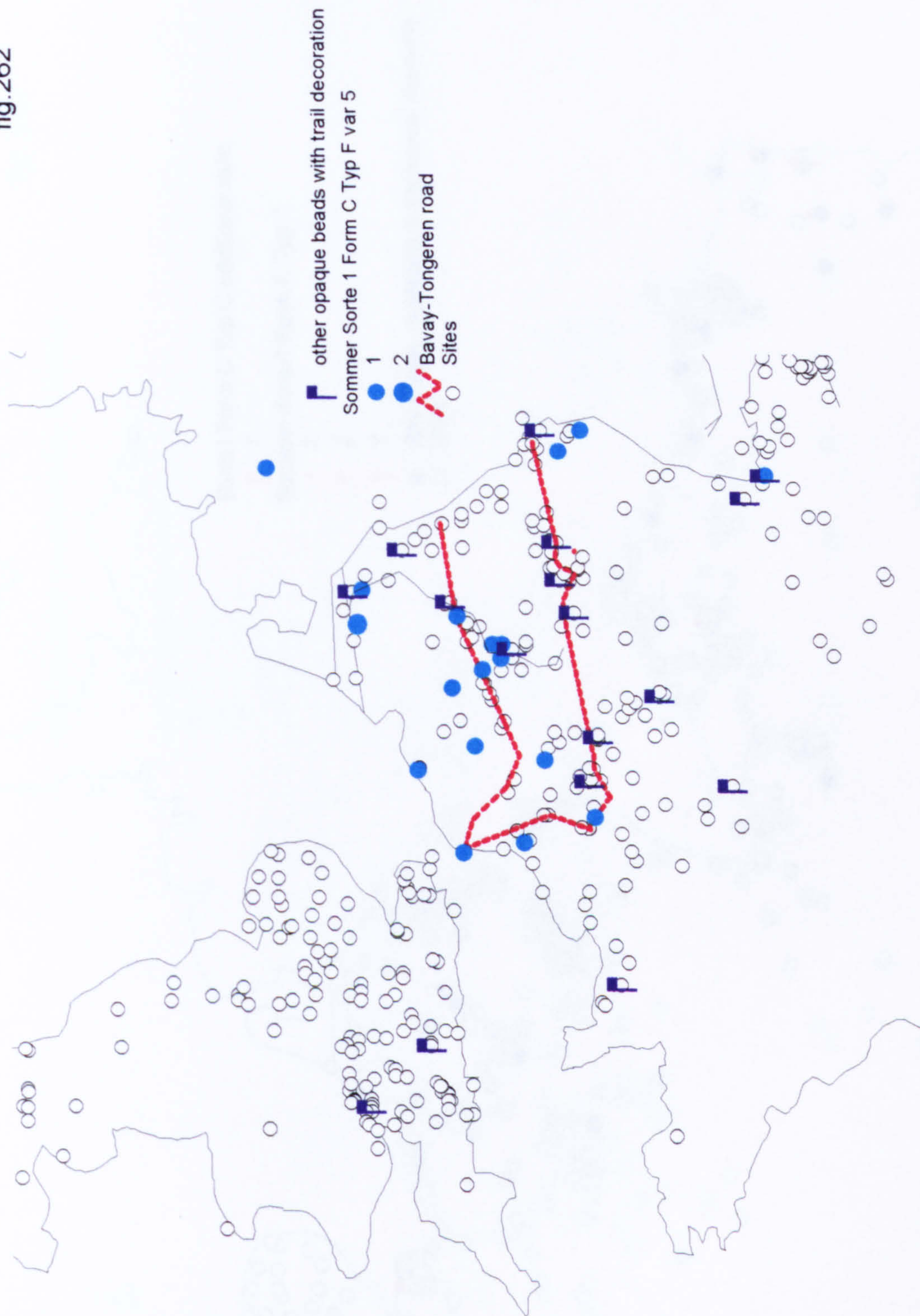
fig.261



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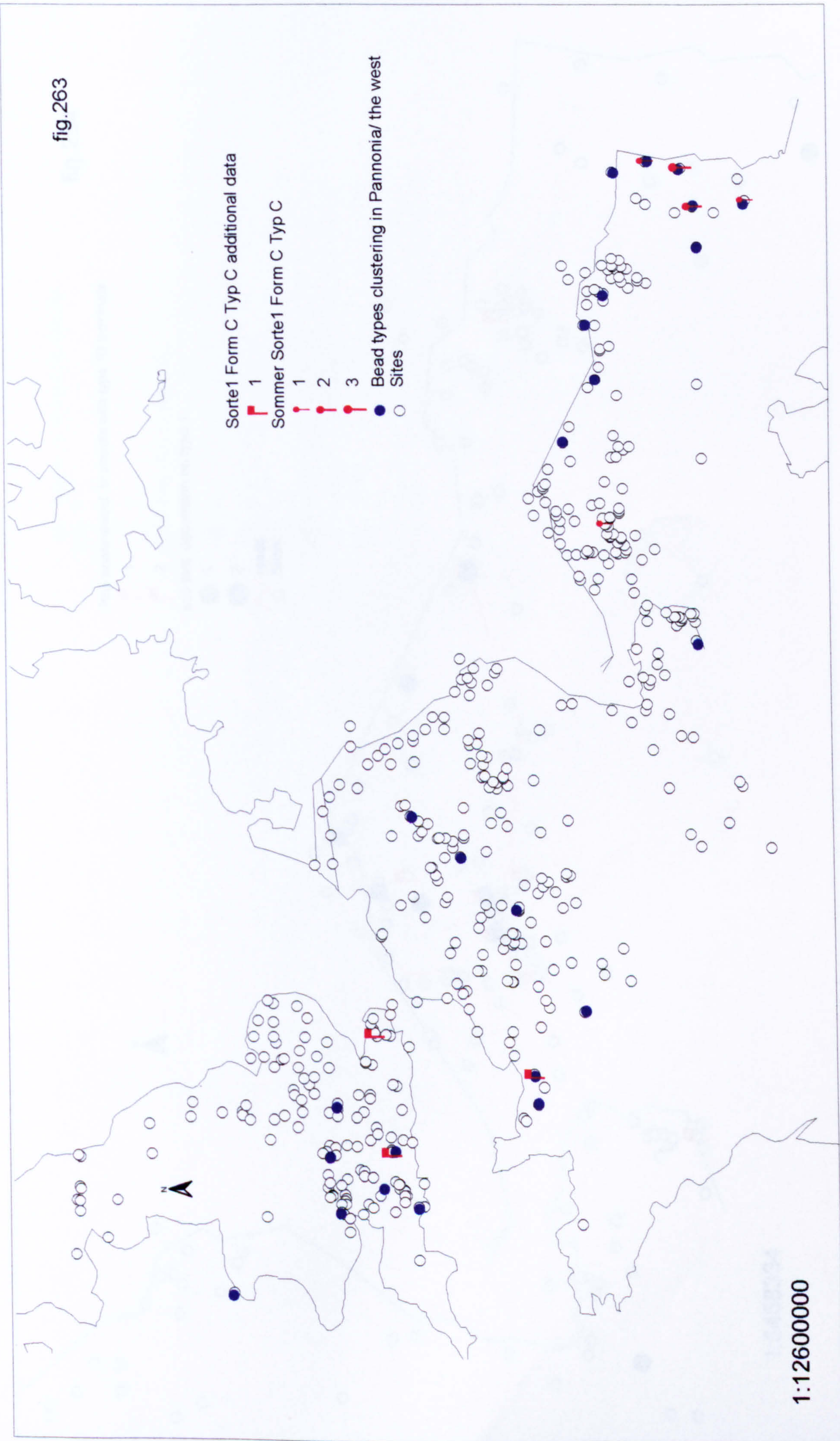


fig. 262



1:12600000







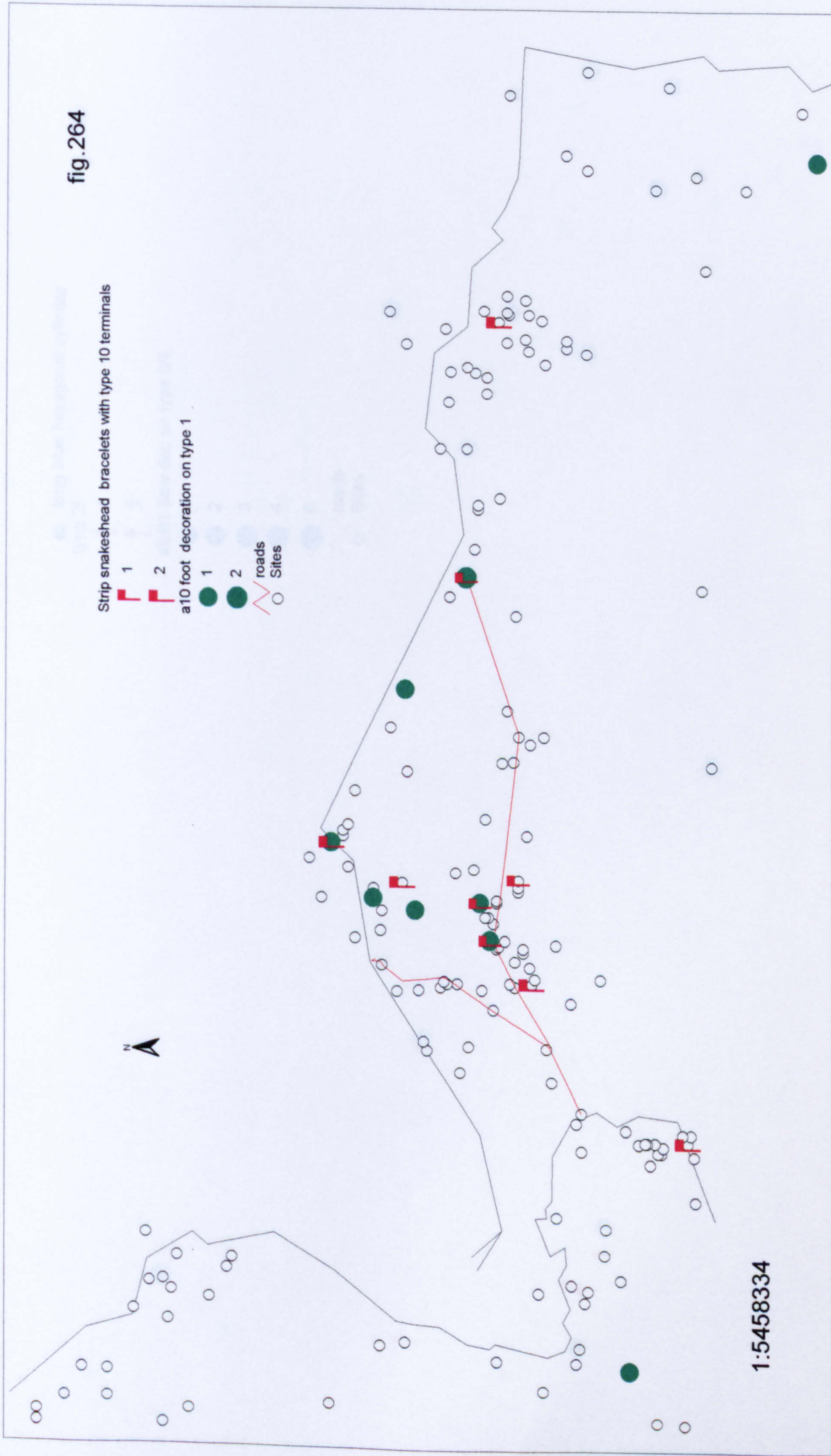
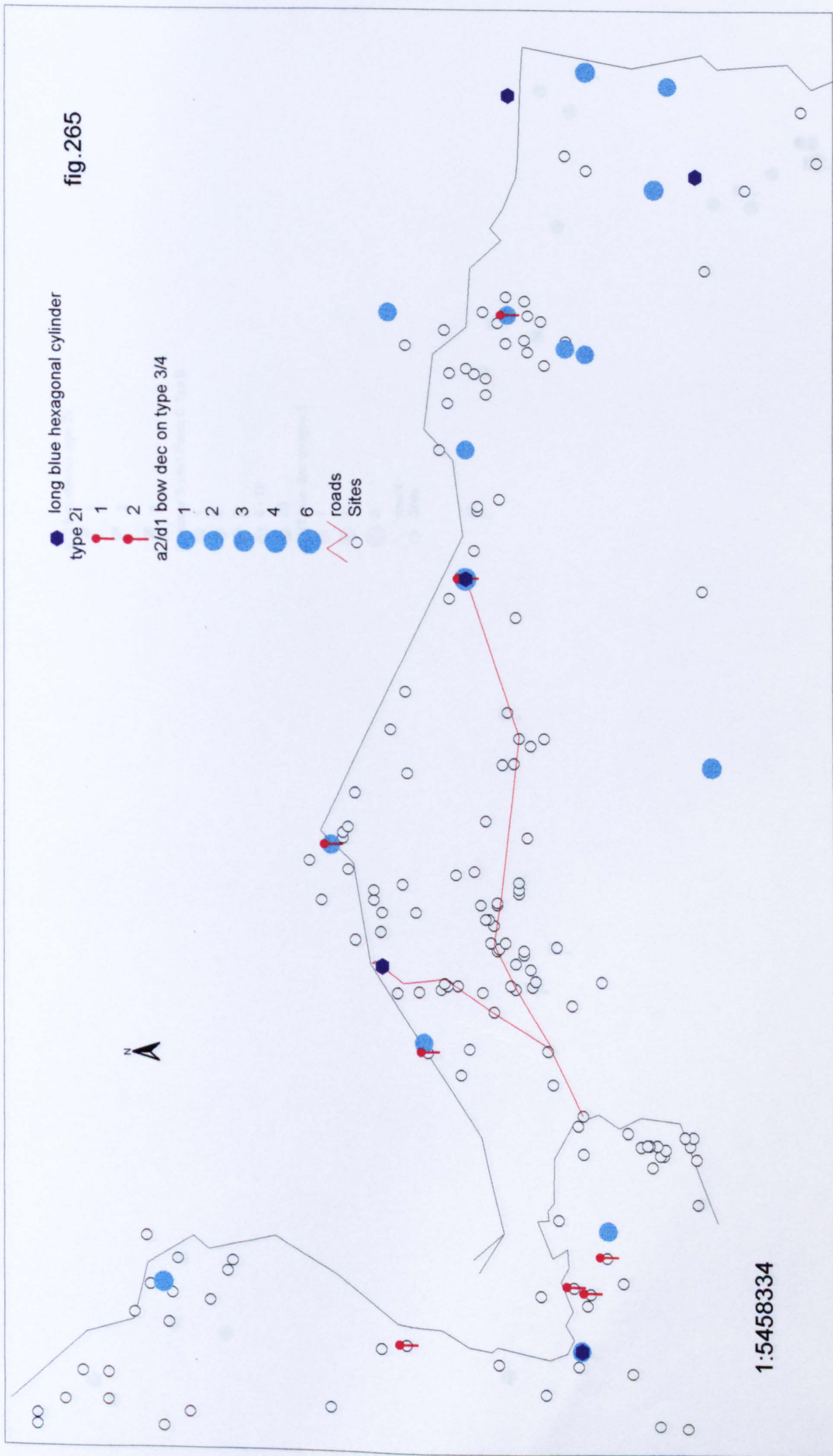


fig.264

1:5458334







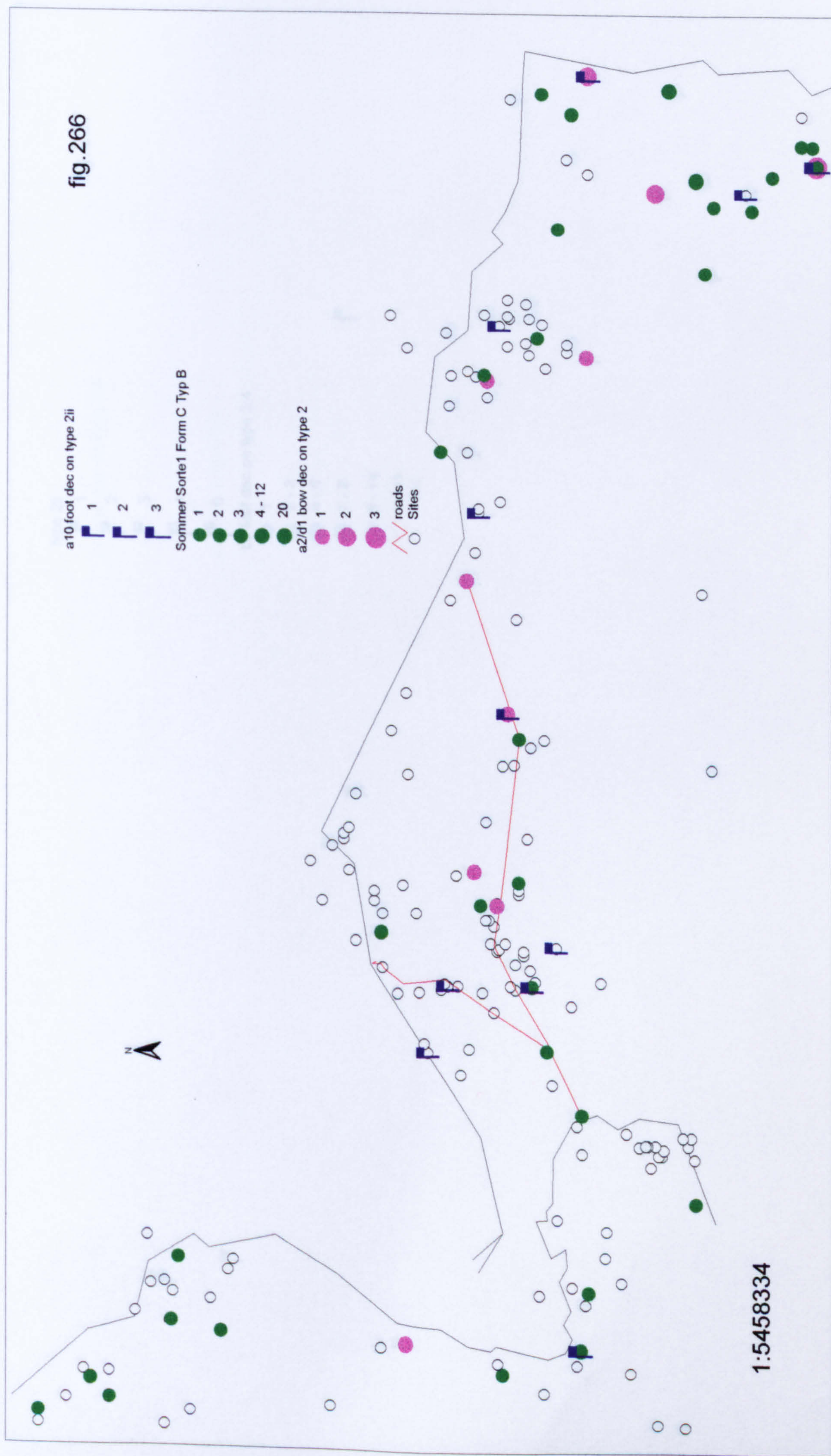


fig.266

1:5458334



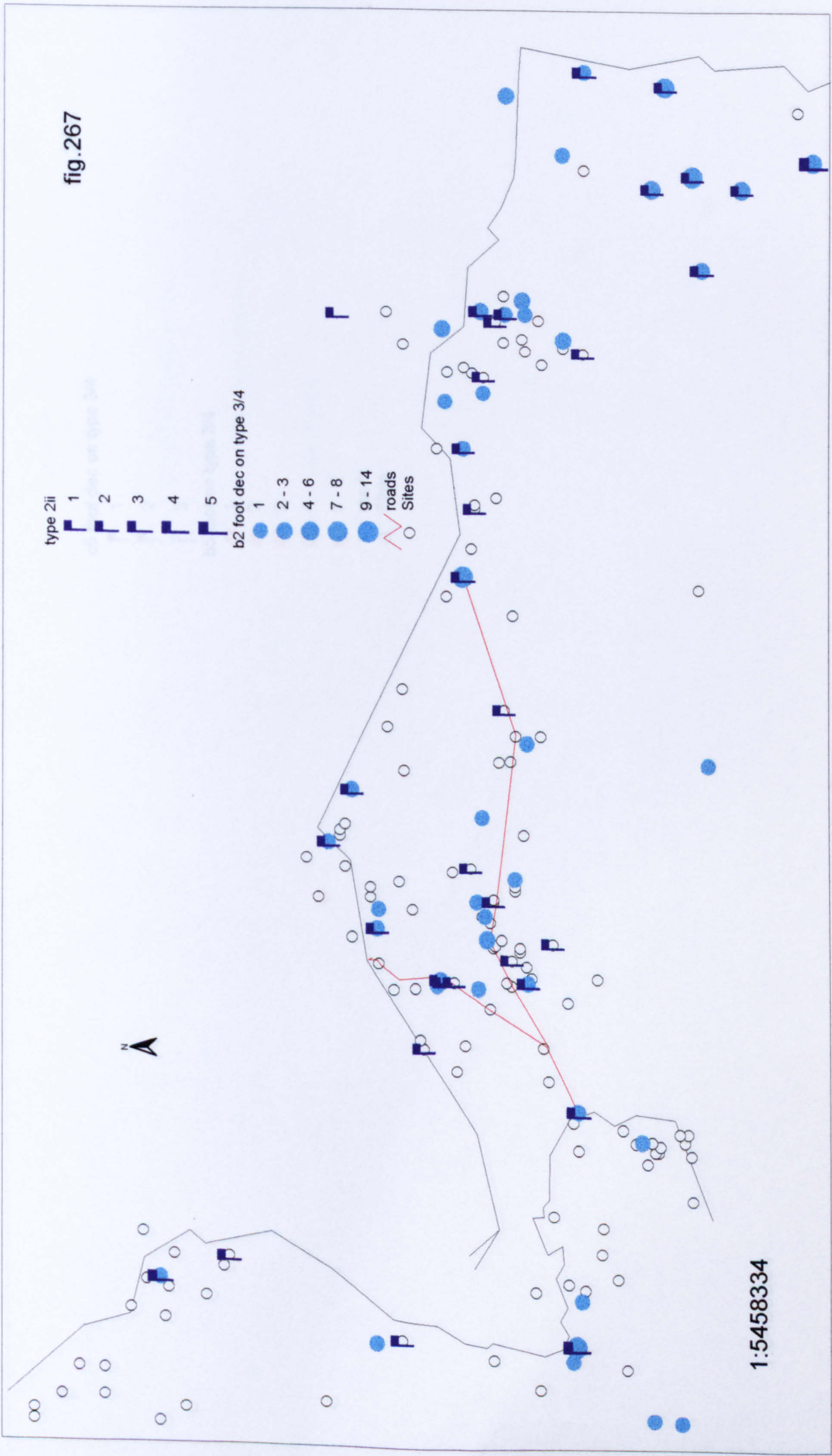
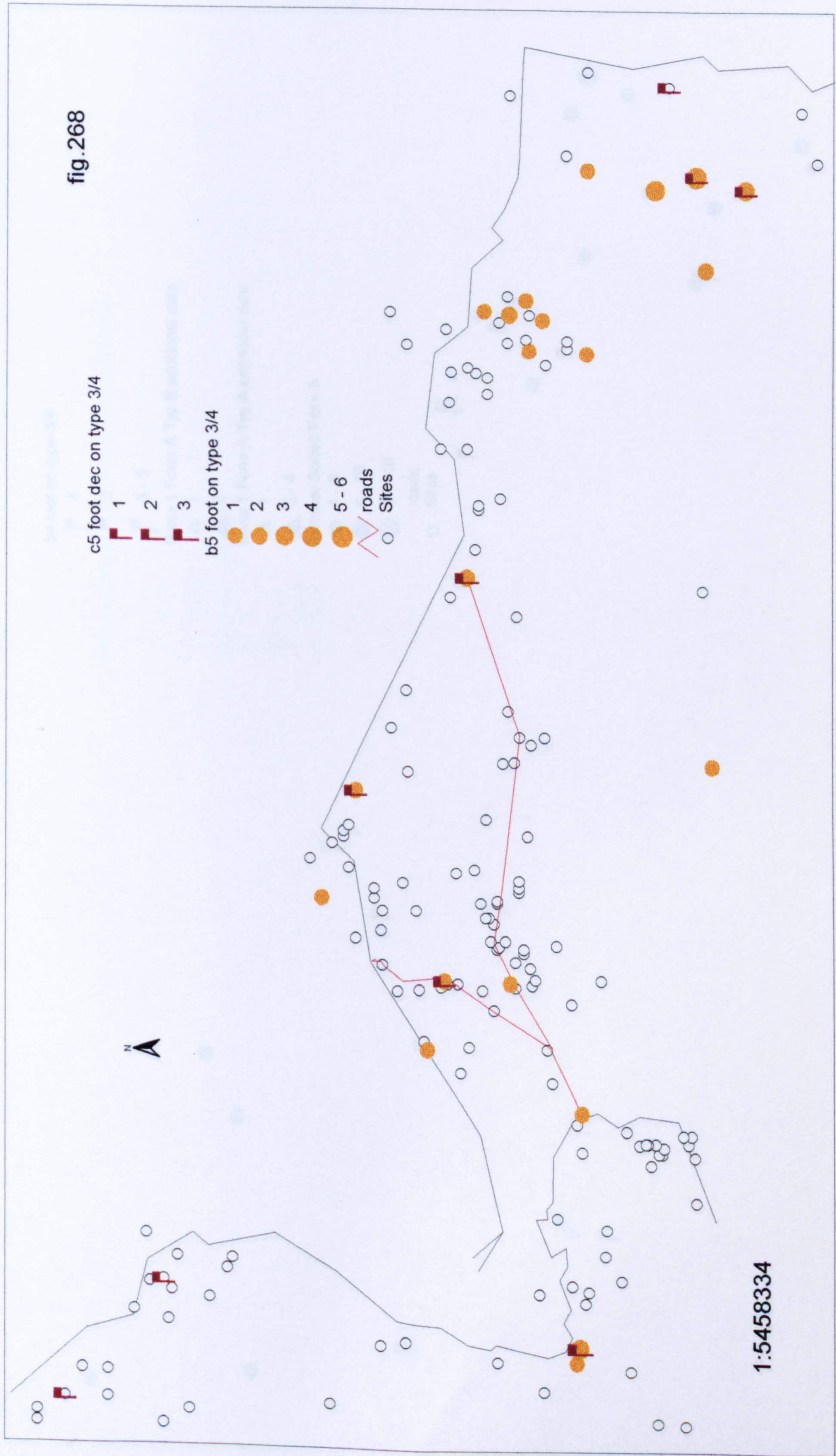
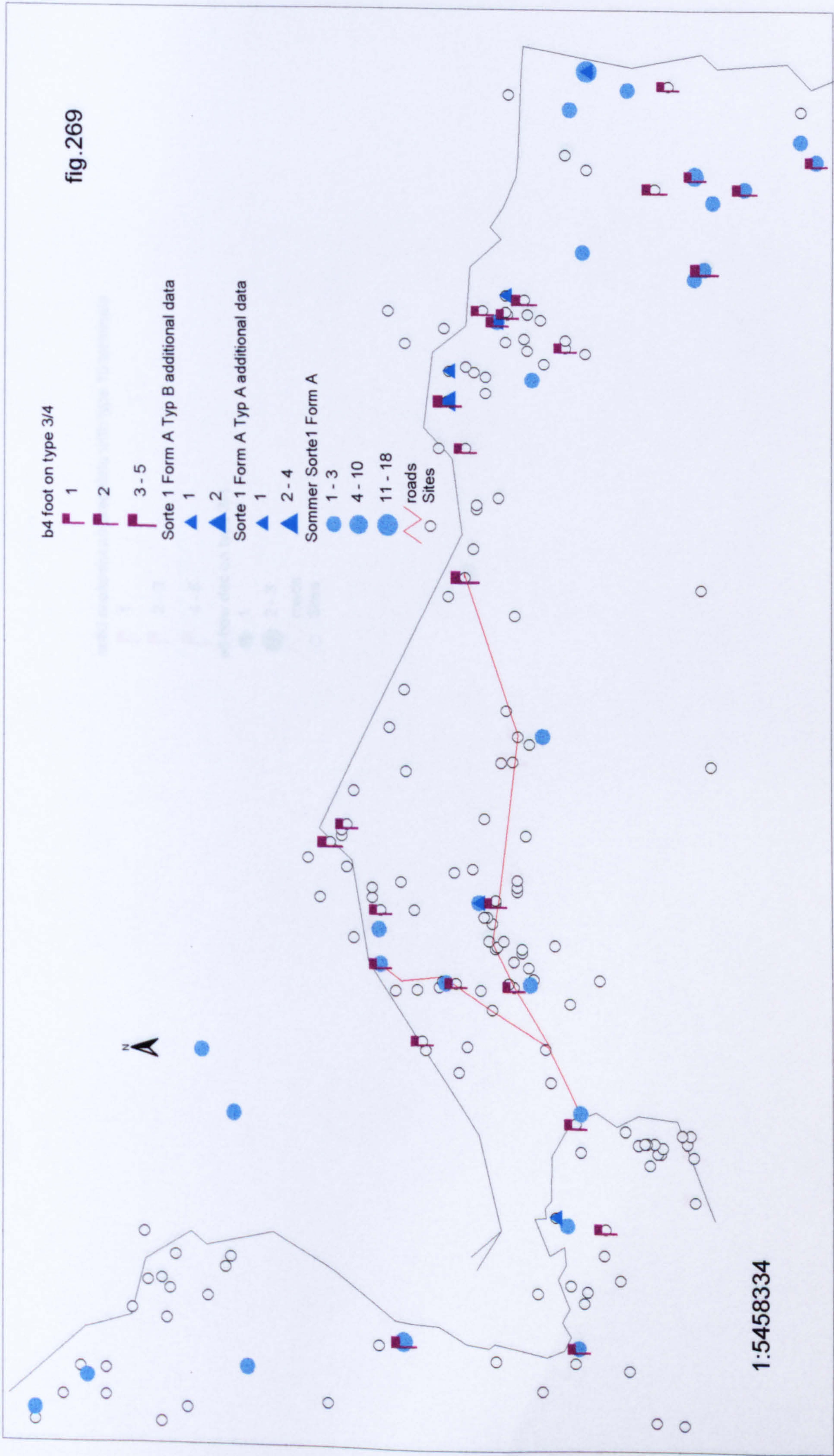


fig.267











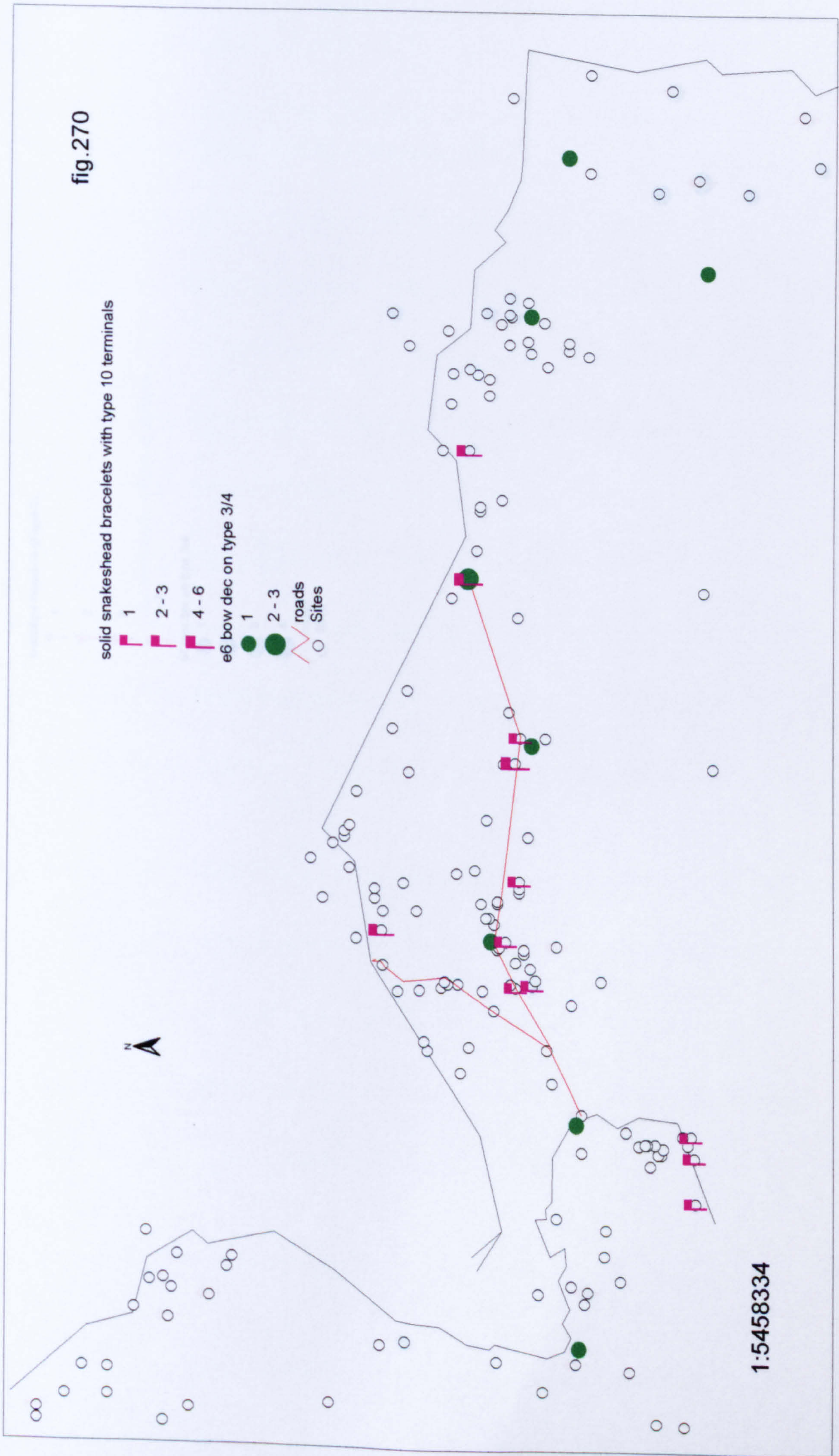


fig.270



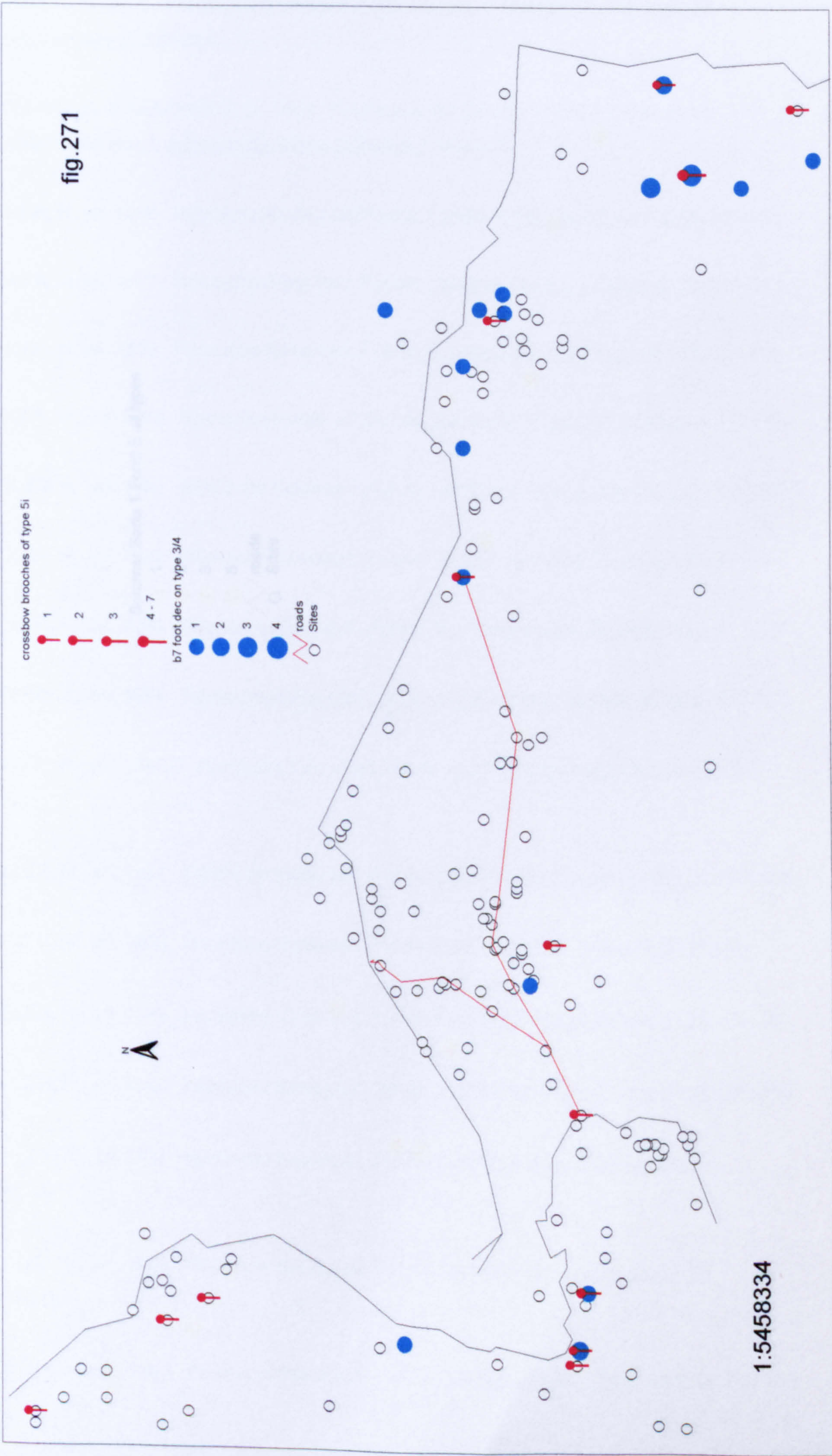
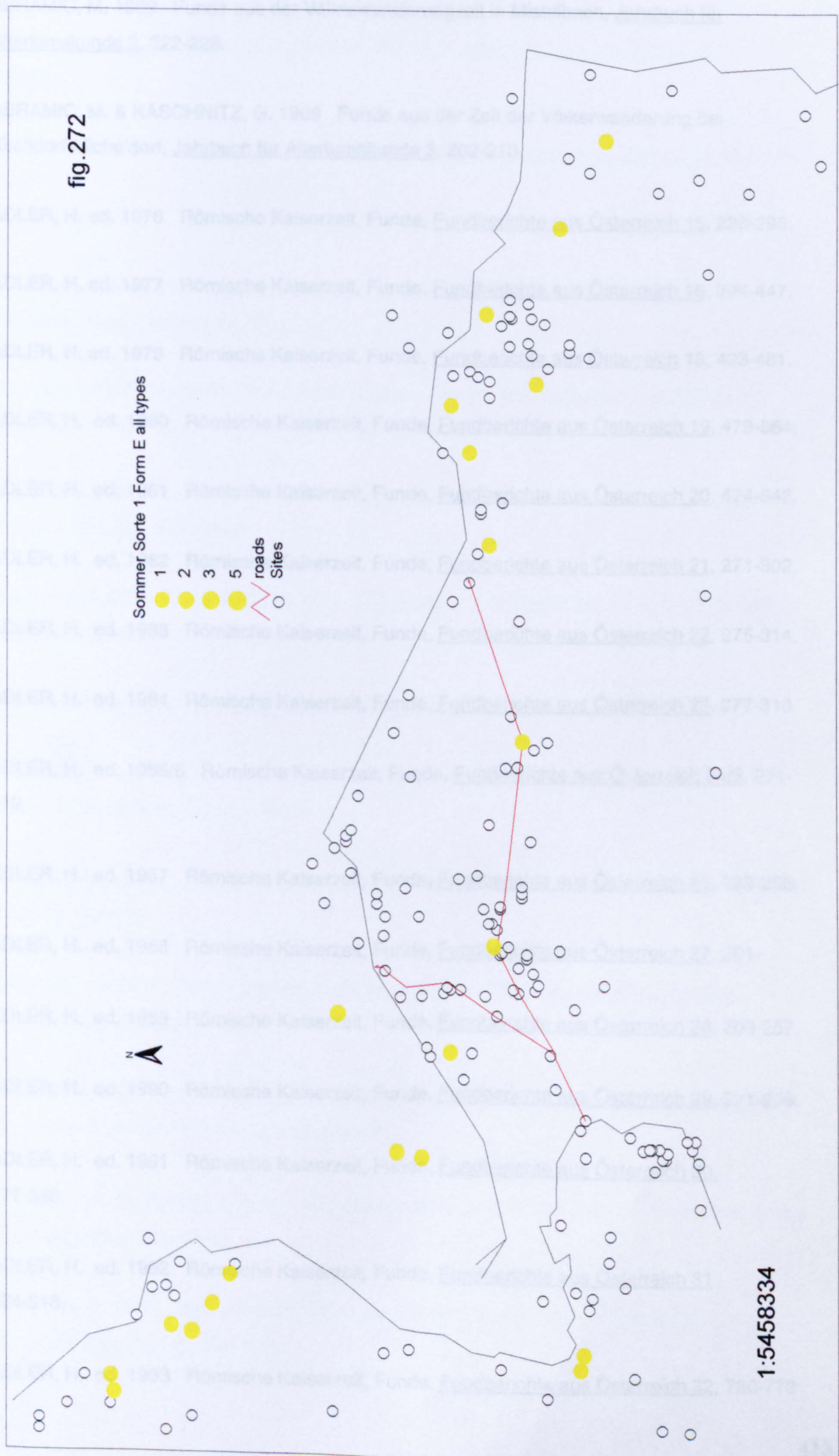




fig.272





ABRAMIC, M. 1909 Funde aus der Völkerwanderungszeit in Mistelbach, Jahrbuch für Altertumskunde 3, 222-228.

ABRAMIC, M. & KASCHNITZ, G. 1909 Funde aus der Zeit der Völkerwanderung bei Kirchdorf-Micheldorf, Jahrbuch für Altertumskunde 3, 202-210.

ADLER, H. ed. 1976 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 15, 236-295.

ADLER, H. ed. 1977 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 16, 394-447.

ADLER, H. ed. 1979 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 18, 423-481.

ADLER, H. ed. 1980 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 19, 479-564.

ADLER, H. ed. 1981 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 20, 474-542.

ADLER, H. ed. 1982 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 21, 271-302.

ADLER, H. ed. 1983 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 22, 275-314.

ADLER, H. ed. 1984 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 23, 277-310.

ADLER, H. ed. 1985/6 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 24/5, 271-319.

ADLER, H. ed. 1987 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 26, 229-255.

ADLER, H. ed. 1988 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 27, 291-

ADLER, H. ed. 1989 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 28, 203-257.

ADLER, H. ed. 1990 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 29, 221-259.

ADLER, H. ed. 1991 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 30, 271-320.

ADLER, H. ed. 1992 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 31 464-518.

ADLER, H. ed. 1993 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 32, 720-773



- ADLER, H. ed. 1994 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 33, 544-614.
- ADLER, H. ed. 1995 Römische Kaiserzeit, Funde, Fundberichte aus Österreich 34, 686-728.
- ALFÖLDY, G. 1974 Noricum, Routledge & Keegan Paul, London.
- ALFÖLDI, M. et al. 1957 Intercisa II: (Dunapentele) Geschichte der Stadt in der Römerzeit, Akadémiai Kiadó, Budapest.
- ALLASON-JONES, L. 1993 Small Finds, Casey & Davies eds. Excavations at Segontium Roman Fort, 165-210, Council for British Archaeology Research Report 90, London.
- ALLASON-JONES, L. & MCKAY, B. 1985 Coventina's Well: A Shrine on Hadrian's Wall, Chesters Museum, Gloucester.
- ALLASON-JONES, L. & MIKET, R. 1984 The Catalogue of Small Finds from South Shields Roman Fort, Society of Antiquaries of Newcastle on Tyne, Gloucester.
- ANDERSON, J. 1867 The Roman City of Uriconium at Wroxeter, Salop, Smith, London.
- ARTHUR, P. & WILLIAMS, D. 1978 An Unusual Late Roman Mortarium from Caistor-by-Yarmouth, Norfolk, Britannia 9, 394-5.
- ATKINSON, D. 1916 The Romano-British Site on Lowbury Hill in Berkshire, University College Reading, Reading.
- BARFIELD, L. 1968 Ein Burgus in Froitzheim, Kr.Düren, Beiträge zur Archäologie des Römischen Rheinlands 3, 9-119.
- BAYLEY, J. 1992 Non-ferrous metalworking in England, Late Iron Age to Early Medieval, University of London PhD thesis, unpublished.
- BAYLEY, J. & BUTCHER, S. 1981 Variations in alloy composition of Roman brooches, Revue d'Archéométrie 1981, 29-36.
- BEHLING, U. 1964 Spätromische Gräber aus Künzing an der Donau, Bayerische Vorgeschichtsblätter 29, 254-259.



BEHN, F. 1913 Sammlung Ludwig Marx in Mainz, Kataloge West und Süddeutscher Altertumssammlungen II, Römisch-Germanische Kommission, Frankfurt am Main.

BEHN, F. 1935 Ein vorfränkisches Gräberfeld bei Lampertheim am Rhein, Mainzer Zeitschrift 30, 56-65.

BEHRENS, G. 1919 Germanische Kriegergräber des 4.-7. Jahrhunderts im Altertümuseum zu Mainz, Mainzer Zeitschrift 14, 1-16.

BEHRENS, G. 1920 Bingen: Städtische Altertumssammlung, Kataloge West und Süddeutscher Altertumssammlungen IV, Römisch-Germanische Kommission, Frankfurt am Main.

BEHRENS, G. 1950 Römische Fibeln mit Inschrift, Behrens & Werner eds. Reinecke Festschrift, 1-12, E.Schneider, Mainz.

BELOT, E. & CANUT, V. 1993 Recherches Archéologiques en Boulogne-sur-Mer, Revue du Nord LXXV, 57-87.

BERSU, G. 1964 Die spätrömische Befestigung Bürgle bei Gundremmingen, Münchner Beiträge zur Vor- und Frühgeschichte 10, C.H.Beck, München.

BIDWELL, P. 1985 The Roman Fort of Vindolanda, Historic Buildings & Monuments Commission for England, Archaeology Report 1, London.

BIDWELL, P. & SPEAK, S. 1994 Excavations at South Shields Roman Fort Vol.1, Society of Antiquaries of Newcastle-on-Tyne, Gloucester.

BINDING, G. 1968 Einer Römische Befestigung an der Alten Landstrasse bei Rheinberg, Beiträge zur Archäologie des Römischen Rheinlands 3, 121-151.

BISHOP, M. 1996 Finds from Roman Aldborough, Oxbow Monograph 65, Oxbow Books, Oxford.

BLOCKLEY, K. et al, 1995 Excavations in the Marlowe Carpark and surrounding areas vols I & II, The Archaeology of Canterbury Volume V, Canterbury Archaeological Trust, Canterbury.

BLOEMERS, J. & THIJSEN, J. 1990 Facts & Reflections on the continuity of settlement at Nijmegen, 133-150 in Beteman, Bos & Heidinga eds. Medieval Archaeology in the Netherlands, Van Gorcum, Assen.



- BÖGLI, H. 1984 Aventicum: la ville Romaine et le musée, Guide Archéologique de la Suisse 19.
- BÖHME, H. 1974 Germanische Grabfunde des 4. bis 5. Jahrhunderts, Münchner Beiträge zur Vor- und Frühgeschichte 19, C.H.Beck, München.
- BÖHME, H. 1980 Gallien in der Spätantike, Römisch-Germanisches Zentralmuseum Mainz, Mainz.
- BÖHME, H. 1985a Les découvertes du Bas-Empire à Vireux-Molhain, Le Cimetière et la fortification du Bas-Empire de Vireux-Molhain, Lemant ed. 76-88.
- BÖHME, H. 1985b Observations sur le rôle du Mont-Vireux au Bas-Empire, Le Cimetière et la fortification du Bas Empire de Vireux-Molhain, Lemant ed. 131-33
- BÖHME, H. 1987 Gallien in der Spätantike, Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz 34, 770-773.
- BÓNA, I. & VAGO, E. 1976 Die Gräberfelder von Intercisa I: Der spätrömische Südostfriedhof, Akadémiai Kiadó, Budapest.
- BOON, G. 1945 The Roman site at Sea Mills, Transactions of the Bristol & Gloucestershire Archaeological Society LXVI, 258-95.
- BOON, G. 1964 The Gold Brooch & Gold Phylactery from Segontium, Bulletin of the Board of Celtic Studies 21, 96-9.
- BOON, G. 1974 Silchester: The Roman town of Calleva, David & Charles, London.
- BOON, G. 1977 Gold in Glass beads from the ancient world, Britannia 8, 193-207.
- DE BOUARD, M. 1970 Circonscription de Haute et Basse Normandie, Gallia 28, 269-79.
- BOUCHER, S. 1971 Vienne: Bronzes Antiques, Editions des Musées Nationaux, Paris.
- BOUCHER, S., PERDU, G. & FEUGÈRE, M. 1980 Bronzes Antiques du Musée de la Civilisation Gallo-Romaine à Lyon, De Boccard, Paris.
- BOULANGER, C. 1902 Le Mobilier Funéraire Gallo-Romain et Franc en Picardie et en Artois, Foulard & Leroux, Paris.



BOURDIEU, P. 1977 Outline of a Theory of Practice, English language edition trans. Niece, Cambridge University Press, Cambridge.

BOURDIEU, P. 1984 Distinction: A Social Critique of the Judgement of Taste, Routledge, London.

BRAILSFORD, J. 1951 British Museum: Guide to the Antiquities of Roman Britain, Trustees of the British Museum, London.

BRANIGAN, K. 1977 The excavation and study of a Romano-British villa estate 1967-76, British Archaeological Reports 44, Oxford.

BRAUN, D. 1995 Style, Selection & Historicity, 123-41 in Carr & Neitzel eds. Style, Society & Person, Plenum, New York.

BRAUN, T. 1991/2 Das spätrömische Gräberfeld von Girm-Deutschkreutz, Burgenland, Römisches Österreich 19/20, 29-7.

BREWER, R. 1986 Other Objects of Bronze, 172ff in Zienkiewicz, J., ed., The Legionary Fortress Baths at Caerleon. II. The Finds.

BRISSEON, A. et al, 1967 Cimetière Gallo-Romain d'Aulnay-sur-Marne, Memoires de la Societé d'agriculture, commerce, science et arts du département de la Marne LXXXII, 30-50.

BRISSEON, A. et al, 1969 Les tombes Gallo-Romains de Damery, Memoires de la Societé d'agriculture, commerce, science et arts du département de la Marne LXXXIV, 39-56.

BRODRIBB, A. et al, 1971 Excavations at Shakenoak volume 2, privately printed, Oxford.

BRODRIBB, A. et al, 1978 Excavations at Shakenoak volume 5, privately printed, Oxford.

BRODRIBB, A. et al, 1968 Excavations at Shakenoak volume 1, privately printed, Oxford.

BRODRIBB, A. et al, 1972 Excavations at Shakenoak volume 3, privately printed, Oxford.

BRODRIBB, A. et al, 1973 Excavations at Shakenoak volume 4, privately printed, Oxford.



- BROWN, S. 1993 The Morgan Bracelets Reconsidered, 85-92 in Outils et ateliers d'Orfèvres des temps anciens, Antiquités Nationales Mémoire 2, Société des amis du Musée des Antiquités Nationales et du Château, St.Germain-en-Laye.
- BROWN, P. 1971 The World of Late Antiquity, Thames & Hudson, London.
- BRULET, R. 1995c Das spätrömische Verteidigungssystem zwischen Mosel und Nordseeküste, 102-119 in Die Römische Reichsgrenze zwischen Mosel und Nordseeküste, Bechert, T. & Willems, J. eds., Theiss, Stuttgart.
- BRULET, R. 1969 La Nécropole Gallo-Romaine de Biesme, Annales de la Société des Antiquaires de Namur 54-55, 49-119.
- BRULET, R. 1981 Braives Gallo-Romain: la Zone Centrale, Université de Louvain, Louvain-la-Neuve.
- BRULET, R. 1991 Les Fouilles du Quartier Saint-Brice à Tournai, Université de Louvain, Louvain-la-Neuve.
- BRULET, R. 1995 La Sépulture du roi Childéric à Tournai et le site funéraire, Université de Louvain, Louvain-la-Neuve.
- BRULET, R. 1995a Morlanwez II, 36-7 in Forts Romains de la route Bavay-Tongres, Plumier & Thollard eds., Louvain-la-Neuve.
- BRULET, R. 1995b Liberchies, 38-44 in Forts Romains de la route Bavay-Tongres, Plumier & Thollard eds., Louvain-la-Neuve.
- BRULET, R. & COULON, G. 1977 La Nécropole de la rue perdue à Tournai, Publication de la Université de Louvain, Louvain-la-Neuve.
- VAN BUCHEM, H. 1941 De Fibulae van Nijmegen, Centrale Drukkerij N.V., Nijmegen.
- VAN BUCHEM, H. 1966 De Gouden Speld van Julianus, Numaga XIII no.2, 50-104.
- VAN BUCHEM, H. 1967 Een Silveren Dreiknoppenfibula van Ijzendoorn, Westerrheen XVI 1, 148-151.
- VAN BUCHEM, H. 1970 Miscellanea Archaeologica, Numaga XVII, 137-144.



VAN BUCHEM, H. 1973 Bemerkungen zu den Dreiknopffibeln des vierten Jahrhunderts, Bulletin Antieke Beschaving XLVIII, 143-157

VAN BUCHEM, H. 1973b Viator Vivas, 263-70 in Archeologie en Historie: Opgedragen aan H. Brunsting bij zijn zeventigste, Van Dishoeck, Bussum.

BUCKTON, D. ed. 1994 Byzantium: Treasures of Byzantine Art & Culture, British Museum Press, London.

BUDJA, M. 1979 Metallarmreifen in den Römergräbern Sloweniens, Archeološki vestnik 30, 243-253.

BULLINGER, H. 1969 Spätantike Gürtelbeschläge, Dissertationes Archaeologicae Gandenses, Bruges.

BURGER, A. 1966 The Late Roman Cemetery at Sagvar, Acta Archaeologica Academiae Scientiarum Hungaricae 18, 99-234.

BURGER, A. 1979 Das spätrömische Gräberfeld von Somogyszil, Akadémiai Kiadó, Budapest.

BURGERS, J. 1968 Twee Romeinse Vondsten uit Mijnsheerenland, Westerheem XVII, 126-132.

BURNETT, A. 1987 Coinage in the Roman World, Batsford, London.

BUSHE-FOX, J. 1928 2nd Report on the Excavation of the Roman Fort at Richborough, Society of Antiquaries Research Report, Society of Antiquaries, Oxford.

BUSHE-FOX, J. 1932 3rd Report on the Excavation of the Roman Fort at Richborough, Society of Antiquaries Research Report, Society of Antiquaries, Oxford.

BUSHE-FOX, J. 1949 4th Report on the Excavation of the Roman Fort at Richborough, Society of Antiquaries Research Report XVI, Society of Antiquaries, London.

CABUY, Y. 1992 Les Capitales d'un collectionneur: de Bagacum Nerviorum à Augusta Trevirorum, 123-47 in La Collection Edouard Bernays, Musées Royaux d'Art et d'Histoire, Bruxelles.

CAHEN-DELHAYE, M. & MASSÉART, C. 1993 La Fortification du Bas-Empire du Château Renaud à Virton, L'Archéologie en région Wallonie 1980-90, 69-70 in Commission Royale de Monuments, Sites et Fouilles 1,



CANNY, D. 1992 Les Objets en Bronze Gallo-Romains du Musée de Picardie, Mémoires de Maitrise d'Histoire Ancienne de l'Université de Picardie, unpublished.

CARROLL-SPILLECKE, M. 1993 Das römische Militärlager Divita in Köln-Deutz, Kölner Jahrbuch 26, 321-44.

CASEY, P. & DAVIES, J. 1993 Excavations at Segontium (Caernarvon) Roman Fort, 1975-79, Council for British Archaeology research report 90, Council for British Archaeology, London.

CHAPMAN, M. 1995 Freezing the Frame: Dress & Ethnicity in Brittany & Gaelic Scotland, 7-28 in Eicher, J., ed. Dress & Ethnicity, Berg, Oxford.

CLARKE, G. 1979 The Roman Cemetery at Lankhills, Winchester Studies 3, Clarendon Press, Oxford.

CLIFFORD, E. 1930 A Prehistoric and Roman site at Barnwood near Gloucester, Transactions of the Bristol & Gloucestershire Archaeological Society LII, 201-54.

CONKEY, M. & HASTORF, C. eds. 1989 The Uses of Style in Archaeology, Cambridge University Press, Cambridge.

COOL, H. 1981 Rochester 1974-75: The Bracelets, Archaeologia Cantiana XCVII, 95-136.

COOL, H. 1983 A Study of the Roman Personal Ornaments made of metal, Ph.D thesis, University of Wales, Cardiff, unpublished.

COOL, H. 1992 Roman metal hair pins from southern Britain, The Archaeological Journal 147, 148-82.

CROUCH, K. 1976 The Archaeology of Staines & the Excavation at Elmsleigh House, Transactions of the London & Middlesex Archaeological Society 27, 71-134.

CRUMMY, N. 1983 The Roman Small Finds from Excavations in Colchester, Colchester Archaeological Report 2, Colchester Archaeological Trust, London.

CUNLIFFE, B. 1968 5th report on the Excavation of the Roman Fort at Richborough, Society of Antiquaries research report 23, Society of Antiquaries, London.



CUNLIFFE, B. ed. 1988 The Temple of Sulis Minerva at Bath: vol. 2 The finds from the sacred spring, Oxford University Committee for Archaeology 16, Oxford.

CUNLIFFE, B. ed. 1975 Excavations at Portchester Castle: vol. 1 Roman, Society of Antiquaries research report 32, London.

CÜPPERS, H. 1983 Die Römer an Mosel und Saar, Philipp von Zabern, Mainz.

CÜPPERS, H. et al, 1984 Trier: Kaiserresidenz und Bischofssitz, Rheinisches Landesmuseum Trier, Philipp von Zabern, Mainz.

CURLE, J. 1932 Objects of Roman & Provincial Roman origin II, Proceedings of the Society of Antiquaries of Scotland 66, 277-397.

DARLING, M. & GURNEY, D. 1993 Caister-on-Sea: Excavations by Charles Green, 1951-55, East Anglian Archaeology Report No.60, Norfolk Museums Service, Dereham.

DASNOY, A. 1965 Quelques ensembles archéologiques du Bas-Empire, Annales de la Société des Antiquaires de Namur 53, 169-231.

DASNOY, A. 1969 La Nécropole de Samson, Annales de la Société des Antiquaires de Namur 54, 277ff.

DAWSON, M. 1994 A Late Roman Cemetery at Bletsoe, Bedfordshire, Bedfordshire Archaeology Monograph 1, Bedford.

DEGEN, R. 1957 Archäologischer Fundbericht, Jahrbuch der Schweizerischen Gesellschaft für Urgeschichte 46, 69-175.

DEGEN, R. 1964 Archäologischer Fundbericht, Jahrbuch der Schweizerischen Gesellschaft für Urgeschichte 51, 71-134.

DELMINE, R., & NOTTE, L. 1988 Trouvailles Archéologiques dans le region de Bayaume, Mémoires Com. département d'histoire et du archéologie du Pas-de-Calais, 34-6.

VAN DER ROEST, J. 1994 Mantel en Kledingspelden in de Romeinse Tijd, 145-52 in Van Es & Hessing eds., Romeinen, Friezen und Franken in het haart van Nederland, Rijksdienst voor het Oudheidkundige Bodemonderzoek Utrecht, Maastricht.

VAN DER SLEEN, W. 1973 A Handbook on Beads, Halbart, Liège.



- DIETZ, K. et al 1979 Regensburg zur Römerzeit, Friedrich Pustet, Regensburg.
- DILLY, G. 1978 Les fibules Gallo-Romaines du Musée de Picardie, Cahiers Archéologiques de Picardie 5, 157-75.
- DOLLFUS, M. 1973 Catalogue des fibules de bronze de Haute-Normandie, Extrait des Mémoires présentés par divers savants à l'Académie des Inscriptions et Belles-Lettres XVI.
- DONOVAN, H. 1934 Excavation of a Romano-British Building at Bourton-on-the-Water, Glos, Transactions of the Bristol & Gloucestershire Archaeological Society LVI, 99-128.
- VAN DOORSELAER, A. et al. 1987 Het Onderzoek te Zerkegem Jabbeke, Westvlaamse Archaeologica 3, 37-54.
- DOWN, A. 1974 Chichester Excavations II, Phillimore, Chichester.
- DOWN, A. 1978 Chichester Excavations III, Phillimore, Chichester.
- DOWN, A. 1979 Chichester Excavations IV, Phillimore, Chichester.
- DOWN, A. & RULE, M. 1971 Chichester Excavations I, Chichester Civic Society Excavations Committee, Chichester.
- DOYEN, J. 1987 Le Relais Romain de Chameleux (Florenville), 71-86 in Archéologie entre Semois et Chiers, ed. Lambert, G., Credit Communal, Leuven.
- DRACK, W. 1966/7 Archäologischer Fundbericht: Bernex, Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte 53, 131.
- DRACK, W. 1980 Die spätrömische Grenzwehr am Hochrhein, Archäologische Führer der Schweiz 13.
- DRESCHER, H. 1959 Ein Beitrag zur Technik römischer Zwiebelknopffibeln, Germania 37, 170-79.
- DREW, C. 1931 Excavations at Jordan Hill, Proceedings of the Dorset Natural History & Archaeology Society LIII, 265-276.



- VAN DRIEL MURRAY, C. 1987 Roman Footwear: A mirror of fashion and society, Friendship-Taylor, Swann & Thomas eds. Recent Research in archaeological footwear, Association of Archaeological Illustrators and surveyors, London.
- DUMAS, F. 1982 La Tombe de Childéric, père de Clovis, Bibliothèque Nationale Département des Monnaies, Médailles et Antiquités, Paris.
- DUNCAN-JONES, R. 1990 Structure & Scale in the Roman Economy, Cambridge University Press, Cambridge.
- ECK, T. 1891 Les deux cimetières Gallo-romains de Vermand et Saint-Quentin, Ernest Leroux, Paris.
- ECKHART, L. 1964 Linzer Fundkatalog 1, Linzer Archäologische Forschungen, Linz.
- EHRICH, R. 1961 On the persistences & recurrences of culture boundaries, Bericht über den V. Internationalen Kongress für Vor- und Frühgeschichte, 254-7, Hamburg.
- EICHER, J. & SUMBERG, B. 1995 World Fashion, Ethnic, and National Dress, 295-306 in Eicher, J., ed., Dress & Ethnicity, Berg, Oxford.
- EISENSTADT, S. 1988 Beyond Collapse, 236-43 in Yoffee & Cowgill eds. The Collapse of Ancient States & Civilisations, University of Arizona Press, Tucson.
- ELSNER, J. 1995 Art & the Roman Viewer, Cambridge University Press, Cambridge.
- ENGEMANN, J. & RÜGER, C. 1991 Spätantike und Frühes Mittelalter, Rheinisches Landesmuseum Bonn, Köln.
- ESCHER, K. 1930 Rechnungen & Akten zur Baugeschichte & Ausstattung des Grossmünster Zürich, Anzeiger für Schweizerische Altertumskunde 32, 133-64.
- ETTLINGER, E. 1973 Die Römischen Fibeln in der Schweiz, Handbuch der Schweiz zur Römer- und Merowingerzeit, Francke Verlag, Bern.
- EVANS, K. 1974 Excavations on a Romano-British site, Wiggonholt, 1964, Sussex Archaeological Collections CXII, 97-151.
- EVISON, V. 1965 The Fifth-century invasions south of the Thames, Athlone Press, London.



EVISON, V. 1982 Anglo-Saxon Glass claw beakers, Archaeologia 107, 44-76.

FARKA, C. 1976 Ein spätrömisches Gräberfeld aus Brunn am Gebirge, Fundberichte aus Österreich 15, 41-90.

FARWELL, D. & MOLLESON, T. 1993 Excavations at Poundbury 1966-80 vol.2 The Cemeteries, Dorset Natural History & Archaeology Society monograph Series 11, Dorchester.

FAUDUET, I. 1992 Musée d'Evreux: Collections archéologiques: Bronzes Gallo-Romains, Instrumentum, Impressions le Trepan, Argenton-sur-Creuse.

FEUGÈRE, M. 1977 Les Fibules Gallo-Romains du Musée Denon à Châlon-sur-Saone, Extraits des Mémoires de la Société d'histoire et d'archéologie, Châlon-sur-Saone XLVII, 77-158.

FEUGÈRE, M. 1978 Principes d'une documentation sur les fibules d'époque Romaine, Maitrise d'archéologie Classique, Université de Lyon II, Lyon.

FISCHER, T. 1990 Das Umland des römischen Regensburg, Münchner Beiträge zur Vor- und Frühgeschichte 42, C.H.Beck, München.

FISCHER, T. 1988 Römer und Bajuwaren an der Donau, Friedrich Pustet, Regensburg.

FLOUEST, M. 1887 Bracelet en bronze portant des caractères inconnus, Bulletin de la Société Nationale des Antiquaires de France 1887, 170-180.

FORBES, J. 1957 Studies in Ancient Technology 5, Brill, Leiden.

FORRER, R. 1927 Strasbourg Argentorate I, Librairie Istra, Strasbourg.

FOX, A. 1940 Excavations in the Legionary Fortress at Caerleon, Monmouthshire, Archaeologia Cambrensis XCV, 101-52.

FOX, A. 1952 Roman objects from Cadbury Castle, Reports & Transactions of the Devonshire Association LXXXIV, 105-14.

FOX, C. 1923 The Archaeology of the Cambridge Region, Cambridge University Press, Cambridge.

FRANCE-LANORD, A. 1963 Une cimetière de Létès à Cortrat, Revue Archéologique 1963 1, 15-35.



FREI, B. 1971 Der römische Gutshof von Sargans, Archäologische Führer der Schweiz 3.

FREMERSDORF, F. 1928 Die Denkmäler des römischen Köln, de Gruyter, Berlin.

FREND, W. 1968 A Roman farm settlement at Godmanchester, Cambs., Proceedings of the Cambridge Antiquaries Society LXI, 19-43.

FRERE, S. 1972 Verulamium Excavations I, Research Report of the Society of Antiquaries XXVIII, Society of Antiquaries, Oxford.

FRERE, S. 1984 Verulamium Excavations III, Oxford University Committee for Archaeology, Oxford.

FREY, M. GILLES, K. & THIEL, M. 1995 Das römische Bitburg, Rheinisches Landesmuseum Trier, Trier.

FRIEDHOFF, U. 1991 Der römische Friedhof an der Jakobstrasse zu Köln, Philipp von Zabern, Mainz.

FÜLEP, F. 1977 Roman Cemeteries on the territory of Pécs, Akadémiai Kiadó, Budapest.

GALLIOU, P. 1974 Fibules Armoricaines I, Archéologie en Bretagne 2, 5-14.

GALLIOU, P. 1989a Le Finistère: Carte Archéologique de la Gaule 29, Academie des Inscriptions et Belles Lettres, Paris.

GALLIOU, P. 1989b Les Tombes Romaines d'Armorique, Documents d'archéologie Francaise no.17, Paris.

GALLOWAY, P. 1979 The bone objects, 246-256 in Clarke G. The Roman Cemetery at Lankhills, Winchester Studies 3, Clarendon Press, Oxford.

GARBSCH, J. 1965 Die norisch-pannonische Frauentracht im 1. und 2. Jahrhundert, Münchner Beiträge zur Vor- und Frühgeschichte 11, C.H.Beck, München.

GARBSCH, J. 1966 Der Moosberg bei Murnau, Münchner Beiträge zur Vor- und Frühgeschichte 12, C.H.Beck, München.

GARBSCH, J. 1971 Spätrömische Schatzfunde aus Kastell Vermania, Germania 49, 137-154.



- GARBSCH, J. 1988 Das spätrömische Kastell Vermania bei Isny I, Münchner Beiträge zur Vor- und Frühgeschichte 44, C.H. Beck, München.
- GIBSON, J. & SIMPSON, S. 1911 The Milecastle on the wall of Hadrian at the Poltross Burn, Transactions of the Cumbrian and Westmorland Antiquarian & Archaeological Society series 2 XI, 390-416.
- GREEN, H. 1959 A Romano-British Farm at St.Ives, Proceedings of the Cambridge Antiquaries Society LII, 23-129.
- GREENFIELD, E. 1963 The Romano-British Shrines at Brigstock, Northants., The Antiquaries Journal XLIII, 228-263.
- GRÜNEWALD, M. 1947 Die Kleinfunde des Legionlagers von Carnuntum, Der Römische Limes in Österreich XXXI
- GUGL, C. 1995 Die römischen Fibeln aus Virunum, Landesmuseum Kärnten, Klagenfurt.
- GUIDO, M. 1978 Glass Beads of the Prehistoric & Roman Periods in Britain & Ireland, Society of Antiquaries Research Report 35, Society of Antiquaries, London.
- GUIDO, M. 1979 The Beads, 292-300 in Clarke, G., The Roman Cemetery at Lankhills, Winchester Studies 3, Clarendon Press, Oxford.
- GUISAN, M. 1975 Bijoux Romains d'Avenches, Bulletin de l'Association Pro Aventico 23, 5-39.
- HAALBOS, J. 1984-5 Fibulae uit Maurik, Oudheidkundige Mededelingen Supplement 65, Rijksmuseum van Oudheden, Leiden.
- HABERY, W. 1942 Spätantike Gläser aus Gräbern von Mayen, Bonner Jahrbücher 147, 249-284.
- HAFFNER, A. 1980 Neue Ausgrabungen im keltisch-römischen Gräberfeld von Wederath-Belginum, Funde und Ausgrabungen im Bezirk Trier 12, 16-40.
- HALSALL, G. 1992 The Origins of the Reihengraberzivilisation: 40 years on, 196-207 in Drinkwater & Eltham, eds., 5th century Gaul: A Crisis of Identity, Cambridge University Press, Cambridge.



- HARDEN, D. 1971 Ancient Glass III: Post-Roman, Archaeological Journal CXXVIII, 78-117.
- HÄRKE, H. 1980 Die Grabung des Jahres 1976 auf dem Münsterplatz in Neuss, Bonner Jahrbücher 180, 493-571.
- HARTMANN, M. 1992 Spätrömische Gräber von Windisch/Oberberg, Jahresbericht Gesellschaft Pro Vindonissia 1992, 17-20.
- HATTATT, R. 1982 Ancient & Romano-British Brooches, Dorset Publishing Company, Dorset.
- HATTATT, R. 1985 Iron-Age and Roman Brooches, Oxbow Books, Oxford.
- HATTATT, R. 1987 Brooches of Antiquity: A third selection from the author's collection, Oxbow Books, Oxford.
- HAVERFIELD, F. 1919 Catalogue of the Romano-British fibulae in the museum Tullie House, Carlisle, Transactions of the Cumberland & Westmorland Archaeological & Antiquarian Society XIX, 1-16.
- HAWKES, S. & DUNNING, G. 1961 Soldiers & Settlers in Britain: 4th-5th century, Medieval Archaeology 5, 1-70.
- HEAVERNICK, T. 1968 Perlen und Glasbruchstücke als Amulette, Jahrbuch des Germanisch Zentralmuseums Mainz 15, 120-33.
- HELL, M. 1909 Aus Salzburg, Jahrbuch für Altertumskunde 3, 98-116.
- HELL, M. 1943a Ein münzdatiertes Grab der Spätantike aus Salzburg-Klessheim, Jahrbuch des Österreichischen Archäologischen Instituts 35, 53-63.
- HELL, M. 1943b Zwei spätantike Gräber aus Irrsdorf im Gau Salzburg, Jahrbuch des Österreichischen Archäologischen Instituts 35, 39-51.
- HELL, M. 1959 Zwei spätrömisch Gräber aus Grödig bei Salzburg, Jahrbuch des Österreichischen Archäologischen Instituts 44-45, 141-2.
- HEURGON, J. 1958 Le Trésor de Ténès, Arts et métiers graphiques, Paris.
- HIGGINS, R. 1961 Greek & Roman Jewellery, Methuen, London.



- HINZ, H. & HÖMBERG, I. 1968 Ausgrabung eines spätrömischen Burgus in Asperden, Kreis Kleve, Beiträge zur Archäologie des Römischen Rheinlands 3, 167-212.
- HOBBS, R. 1997 Late Roman precious metal deposits c.A.D.200-700: Changes in time and space, University of London Ph.D thesis, unpublished.
- HOCHULI-GYSEL, A. et al., 1986 Chur in römischer Zeit: Band 1, Antiqua 12, Schweizerische Gesellschaft für Ur- und Frühgeschichte, Basel.
- HODDER, I. 1982 Symbols in Action, Cambridge University Press, Cambridge.
- HOLBROOK, N.& BIDWELL, P. 1991 Roman Finds from Exeter, Exeter Archaeological Reports: Volume 4, Exeter City Council & University of Exeter, Exeter.
- HORN, G. ed., 1987 Die Römer in Nordrhein-Westfalen, Konrad Theiss, Stuttgart.
- ISTVANOVITS, E. 1993 Das Gräberfeld aus dem 4.-5. Jahrhundert von Tiszadobsziget, Acta Archaeologica Academiae Scientiarum Hungaricae XLV, 92-141.
- JACOBS, J. & VON SCHWERZENBACH, K. 1910, Die römische Begräbnisstrasse von Brigantium, Jahrbuch für Altertumskunde 4, 5-66.
- JOBST, W. 1975 Die römischen Fibeln aus Lauriacum, Forschungen in Lauricaum 10, Oberösterreichisches Landesmuseum, Linz.
- JOHNS, C. 1996 The Jewellery of Roman Britain, UCL Press, London.
- JOLY, D. et al 1988 Chartres 1978-1988: 10 années d'archéologie, 20 siècles d'histoire, Réalisation A.D.A.U.C. Chartres.
- JONES, A. 1964 The Later Roman Empire, Blackwell, Oxford.
- JONES, S. 1997 The Archaeology of Ethnicity, Routledge, London.
- JÄHRLING, W. 1985 Drei spätantike Frauengräber von Gross-Gerau, Archäologisches Korrespondenzblatt 15, 391-4.
- KARNITSCH, P. 1972 Die Kastelle von Lentia (Linz), Linzer Archäologische Forschungen Sonderheft IV 2, Stadtmuseum Linz, Linz.



- KELLER, E. 1971 Die spätrömischen Grabfunde in Südbayern, Münchner Beiträge zur Vor- und Frühgeschichte 14, C.H.Beck, München.
- KELLER, E. 1979 Das spätrömische Gräberfeld von Neuburg an der Donau, Michael Lassleben, Kellmünz.
- KELLER, E. 1987/8 Das spätrömische Gräberfeld von Kirchheim bei München, Bericht der Bayerischen Bodendenkmalpflege 28/9, 216-229.
- KELLNER, H. 1964 Die Kleinfunde aus der spätrömischen Höhensiedlung auf Krüppel bei Schaan, Jahrbuch des Historischen Vereins für das Fürstentum Lichtenstein 64, 57-123.
- KENYON, K. 1948 Excavations at the Jewry Wall Site, Leicester, Society of Antiquaries Research Report XV, Society of Antiquaries, Oxford.
- KING, C. 1992 Roman, Local & Barbarian Coinages in 5th century Gaul, 184-95 in Drinkwater & Eltham eds. 5th Cent.Gaul: A Crisis of Identity, Cambridge University Press, Cambridge.
- KIRK, J. & LEEDS, E. 1952-3 Three early Saxon graves from Dorchester, Oxonensia XVII-XVIII, 63-76.
- KIRK, J. 1949 Bronzes from Woodeaton, Oxon., Oxonensia XIV, 1-45.
- KLEIN, M. et al 1987 Archäologische Ausgrabungen in Breisach am Rhein 1984-1986, Archäologische Informationen aus Baden-Württemberg 1
- KLOIBER, A. 1962 Die Gräberfelder von Lauriacum: Das Ziegelfeld, Forschungen in Lauriacum 4/5, Institut für Landeskunde von Oberösterreich, Linz.
- KLUMBACH, H. 1973 Spätrömische Gardhelme, Münchner Beiträge zur Vor- und Frühgeschichte 15, C.H. Beck, München.
- KOCH, A. 1937 Vor- und Frühgeschichte Starkenburgs, Kichler, Darmstadt.
- KOCH, R. 1976 Spätrömische Ösenperlen aus kobaltblauem Glas, Festschrift für W.Haberey, 71-78, Philipp von Zabern, Mainz.
- KOPYTOFF, I. 1986 The Cultural Biography of Things: Commoditisation as process, 64-9 in Appadurai, A., ed., The Social Life of Things, Cambridge University Press, Cambridge.



KOVRIG, I. 1937 Die Haupttypen der kaiserzeitlichen Fibeln in Pannonien, Dissertationes Pannonicae Ser II No.4, P. Pázmány Universität, Budapest.

KOVRIG, I. 1959 Nouvelles trouvailles du Ve siècle decouvertes en Hongrie, Acta Archaeologica Academiae Scientiarum Hungaricae 10, 210-225

KUCHENBUCH, F. 1954 Die Fibeln mit umgeschlagenem Fuss, Saalburg Jahrbuch 13, 5-52.

LACKNER, A. 1994 Römische Kaiserzeit, Funde, Unterpetersdorf, Fundberichte aus Österreich 33, 548-9

LAMBRICK, G. & ROBINSON, M. 1979 Iron Age and Roman riverside settlements at Farmoor, Oxfordshire, Oxford Archaeology Unit/Council for British Archaeology, Oxford.

LANDAIS, H. & GIRAUD, M. 1984 Gallo-Romains en Île-de-France, Association des Conservateurs des Musées d'Île de France, Paris.

LANTIER, R. 1948 Un cimetière de IV siècle au Mont Auge, L'Antiquité Classique 18, 373-401.

LANYI, V. 1972 Die spätantiken Gräberfelder von Pannonien, Acta Archaeologica Academiae Scientiarum Hungaricae 24, 52-312.

LAUR-BELART, R. 1956 Römisches Zeit, Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte 45, 46-68.

LAUR-BELART, R. 1959 Ein frühchristliches Grab aus Basel, Ur-Schweiz 23, 57-66.

LEAHY, K. 1984 Late Roman & early Germanic metalwork from Lincolnshire, 23-32 in A Prospect of Lincolnshire, County Offices, Lincoln.

LEMANT, J. 1974 Le Cimetière du Bas-Empire de Mézières, Revue Historique Ardennaise IX, 1-19.

LENGYEL, A. & RADAN, G. 1980 The Archaeology of Roman Pannonia, University Press of Kentucky & Akadémiai Kiadó, Budapest.

LERAT, L. 1956 Catalogue des Collections Archéologiques de Besançon: Les fibules Gallo-Romaines, Annales Littéraires de l'Université de Besançon 2nd ser. tome 3.



- LERAT, L. 1957 Catalogue des Collections Archéologiques de Montbeliard: Fibules Gallo-Romains de Mandeure, Annales Littéraires de l'Université de Besançon 2nd ser. tome 4.
- LEROUX, G. & PROVOST, A. 1990 L'Ille et Villaine: Carte Archéologique de la Gaule 30, Academie des Inscriptions et Belles Lettres, Paris.
- LIÉNARD, F. 1881 Archéologie de la Meuse tome I, Societé Philomathique de Verdun, Verdun.
- LIÉNARD, F. 1884 Archéologie de la Meuse tome II, Societé Philomathique de Verdun, Verdun.
- LIÉNARD, F. 1885 Archéologie de la Meuse tome III, Société Philomathique de Verdun, Verdun.
- LINDENSCHMIT, L. 1858 Die Altertümer unserer heidnischen Vorzeit Band II, von Zabern, Mainz.
- LINDENSCHMIDT, L. 1881 Die Altertümer unserer heidnischen Vorzeit Band III, von Zabern, Mainz.
- LINDENSCHMIDT, L. 1900 Die Altertümer unserer heidnischen Vorzeit Band IV, von Zabern, Mainz.
- LOESCHCKE, S. 1925 Frühchristliche Werkstätte für Glasschmuck in Trier, Trierer Heimatbuch 1925, 337-60.
- LOIZEL, M. 1977 Le cimetière Gallo-Romain du Bas-Empire de Marteville, Cahiers Archéologiques de Picardie 4, 151-203.
- DE LONGPERIER, A. 1866 Fibules Antiques à pas de vis, Revue Archéologique 14 new series, 103-8.
- LOVE, J.R. 1991 Antiquity and Capitalism, Routledge, London.
- LUNSINGH-SCHLEURLEER, D. 1987 Antieke Sier, Allard Pierson Museum, Amsterdam.
- MACKENSEN, M. 1995 Das spätrömische Grenzkastell Caelius Mons-Kellmünz, Führer zu archäologischen Denkmälern in Bayern Schwaben 3, Theiss, Stuttgart.
- MACKRETH, D. 1982 The Brooches, microfiche 2/5 in McWhirr, A., ed., Cirencester Excavations II: The Romano-British Cemeteries, Cirencester Excavation Committee, Oxford.



MARIN, J. 1990 Attila: Les Influences Danubiennes dans l'Ouest de l'Europe au V.siecle, Publication de Musée de Normandie 5, Musée de Normandie, Caen.

MATTHEWS, C. 1981 A Romano-British Cemetery at Dunstable, Bedfordshire Archaeological Journal 15, 1-73.

MAXFIELD, V. 1981 The Military Decorations of the Roman Army, Batsford, London.

MAY, J. 1996 Dragonby: Report on Excavations at an Iron Age & Romano-British settlement in North Lincolnshire, Oxbow Monograph 61, Oxbow, Oxford.

MAYR, U. & WINKLER, K. 1991 Das spätantike Gräberfeld von Tulln, Bahnhofstrasse, Fundberichte aus Österreich 30, 33-44.

MEANEY, A. 1981 Anglo-Saxon Amulets & Curing Stones, British Archaeological Reports 96, Oxford.

MELL, R. 1910 Römerfunde aus Scheiben und Thalheim bei Judenburg, Jahrbuch für Altertumskunde 4, 89.

MENGHIN, O. & SERACSIN, A. 1929 Römische Funde aus Sommerein am Leithagebirge, Jahreshefte des Österreichischen Archäologischen Institutes 24, 70-86.

MENGHIN, W. 1990 Frühgeschichte Bayerns, Theiss, Stuttgart.

MERTENS, J. 1977 Quelques considérations sur le limes Belgicus, Akten des XI Internationalen LimesKongress, 63-71, Akadémiai Kiadó, Budapest.

MERTENS, J. & VAN IMPE, L. 1971 Het Laat-Romeins Graafveld van Oudenburg, Archaeologia Belgica 135, Brussel.

MERTENS, J. & BRULET, R. 1974 Le Castellum du Bas-Empire Romain de Brunehaut-Liberchies II, Archaeologia Belgica 163, Bruxelles.

MEYER, E. 1969 Das römische Kastell Irgenhausen, Archäologische Führer der Schweiz 2.

MEYER-FREULER, C. 1989 Das Praetorium und die Basilika von Vindonissa, Veröffentlichungen der Gesellschaft Pro Vindonissa IX.



- MILTNER, F. 1933 Das zweite Amphitheater von Carnuntum, Der Römische Limes in Österreich XVII, 1-72.
- MÓCSY, A. 1981 Die spätrömische Festung und das Gräberfeld von Tokod, Akadémiai Kiadó, Budapest.
- MÓCSY, A. 1974 Pannonia & Upper Moesia, Routledge & Kegan Paul, London.
- MOOSDORF-OTTINGER, I. 1981 Der Goldberg bei Türkheim, Münchner Beiträge zur Vor- und Frühgeschichte 24, C.H.Beck, München.
- MOREAU, F. 1881 Album Caranda: Les Fouilles de Breny, privately printed, St.Quentin.
- MOREAU, F. 1884 Album Caranda: Les Fouilles de Chouy, privately printed, St.Quentin.
- MOREAU, F. 1887 Album Caranda: Les Fouilles de la villa d'Ancy, privately printed, St.Quentin.
- MORIN-JEAN 1910 Les Fibules de la Gaule Romaine, Congrès Préhistoriques de France 6ième session 1910, 803-836.
- MORRIS, A. 1949 The Saxon Shore Fort at Burgh Castle, Proceedings of the Suffolk Institute of Archaeology XXIV, 100-120.
- MÖTEFINDT, H. 1916 Zur Geschichte der Lottetechnik in vor- und Frühgeschichtlicher Zeit, Bonner Jahrbücher 123, 132-89.
- MÖTEFINDT, H. 1925 Zur Geschichte der Schraube, Götze Festschrift, 199-206, Leipzig.
- MÜLLER, G. 1979 Durnomagus: Das römische Dormagen, Rheinland Verlag, Köln.
- MUSÉE CARNAVALET 1985 Lutèce: Paris de César à Clovis, Société des amis du Musée Carnavalet, Paris.
- NASH-WILLIAMS, V. 1932 The Roman Legionary Fortress at Caerleon in Monmouthshire; Report on the excavations carried out in the Prysg Field 1927-9 II, Archaeologia Cambrensis 87, 80ff.
- NEAL, D. 1974 Excavation of a Roman villa in Gadebridge Park, Research Report of the Society of Antiquaries XXXI, Society of Antiquaries, Oxford.



NEAL, D. 1974/6 Northchurch, Boxmoor & Hemel Hempstead Station: the excavation of 3 Roman buildings in the Bulbourne valley, Hertfordshire Archaeology 4, 1-155.

NENQUIN, J. 1953 La Nécropole de Furfooz, De Tempel, Brugge.

NEUGEBAUER, J. & NEUGEBAUER, C. 1986 Ein Friedhof der römischen Kaiserzeit in Klosterneuburg, Archaeologia Austriaca Band 1970, 317-383.

NOWOTNY, E. 1914 Die Grabungen im Standlager zu Carnuntum 1908-11, Der Römische Limes in Österreich 12, 1-222.

OGDEN, J. 1992 Ancient Jewellery, British Museum Press, London.

OLDENSTEIN, J. 1986 Neue Forschungen im spätrömischen Kastell von Alzey, Bericht der Römisch-Germanischen Kommission 67, 289-356.

ONIAN, J. 1980 Abstraction & Imagination in Late Antiquity, Art History 3, 1-24.

OVERBECK, B. 1968 Eine spätrömisch Zwiebelknopffibel aus Lindau-Aeschach, Bayerische Vorgeschichtsblätter 33, 127-130.

OVERBECK, B. 1982 Das Alpenrheintal in Römischer Zeit, Münchner Beiträge zur Vor- und Frühgeschichte 20, C.H.Beck, München.

PÄFFGEN, B. 1992 Die Ausgrabungen in St. Severin zu Köln, Kölner Forschungen Band 5 1-3, Philipp von Zabern, Mainz.

PÁRDUCZ, M. 1941 Denkmäler der Sarmatenzeit Ungarns 1, Országos Magyar Történeti Múzeum, Budapest.

PATEK, E. 1942 Verbreitung und Herkunft der römischen Fibeltypen in Pannonien, Dissertationes Pannonicae Ser. II No. 19, Péter Pázmány Universität, Budapest.

PEACOCK, D. 1982 Pottery in the Roman World, Longman, New York.

PENN, W. 1962 Springhead: Temples II and V, Archaeologia Cantiana LXXVII, 110-89.

PÉTRY, F. 1972 Informations Archéologiques: Circonscriptions d'Alsace, Gallia 30, 379-420.

PFEILER, B. 1970 Römischer Goldschmuck, Philipp von Zabern, Mainz.



PILET, C. 1980 La Nécropole de Frénouville, British Archaeological Reports International Series 83, Oxford.

PILET, C. 1994 La Nécropole de Saint-Martin-de-Fontenay, Calvados, 54e supplément à Gallia, CNRS Editions, Paris.

PILLOY, J. 1886 Etudes sur d'Anciens Lieux de Sépultures dans l'Aisne I, Trinqueneaux - Devienne, Saint-Quentin.

PIRLING, R. 1966 Das römische-fränkische Gräberfeld von Krefeld-Gellep, Germanische Denkmäler der Völkerwanderungszeit Serie B Band 2, Gebr. Mann, Berlin.

PIRLING, R. 1974 Das römische-fränkische Gräberfeld von Krefeld-Gellep 1960-3, Germanische Denkmäler der Völkerwanderungszeit Serie B Band 8, Gebr. Mann, Berlin.

PIRLING, R. 1979 Das römische-fränkische Gräberfeld von Krefeld-Gellep 1964-5, Germanische Denkmäler der Völkerwanderungszeit Serie B Band 10, Gebr. Mann, Berlin.

PIRLING, R. 1989 Das römische-fränkische Gräberfeld von Krefeld-Gellep, Germanische Denkmäler der Völkerwanderungszeit Serie B Band 13, Franz Steiner, Wiesbaden.

PITON, D. & MARCHAND, H. 1978 Une Nécropole du IV siècle à Noyelles-sur-mer, Cahiers Archéologiques de Picardie 5, 199-230.

PITT-RIVERS, W. 1887 Excavations in Cranbourne Chase vol. 1, privately printed, London.

PITT-RIVERS, W. 1888 Excavations in Cranbourne Chase vol. 2, privately printed, London.

PITT-RIVERS, W. 1892 Excavations in Cranbourne Chase vol. 3, privately printed, London.

POLHEMUS, T. ed. 1978 Fashion and Anti-fashion: an anthropology of clothing and adornment, Cambridge University Press, Cambridge.

PRAMMER, J. 1985 Das spätrömische Gräberfeld Straubing-Elisabethstrasse, 49-50 in Ausgrabungen und Funde in Altbayern 1983 bis 1984, Gäubodenmuseum Straubing, Straubing.

PRAMMER, J. 1986 Das spätrömische Gräberfeld Azlburg II, Das Archäologische Jahr in Bayern 1985, 117-119.



PRAMMER, J. 1989 Das römische Straubing: Ausgrabungen, Schatzfund, Gäubodenmuseum, Schnell & Steiner, München-Zürich.

PRÖTTEL, P. 1988 Zur Chronologie der Zwiebelknopffibeln, Jahrbuch des Römisch-Germanischen Zentralmuseum Mainz 35, 347-72.

RAVAUX, J. 1992 La Collection Archéologique de Mme.Perrin de la Boullaye Musée de Chalons-en-Champagne, Chalons-en-Champagne.

RAWES, B. 1980 The Romano-British site at Wycomb, Andoversford: Excavations 1969-70, Transactions of the Bristol & Gloucestershire Archaeological Society XCVIII 12-55.

REAULEUX, M. 1885 Remagen in Mittelalter und zur Römerzeit, Bonner Jahrbücher 1885, 161ff.

REBER, B. 1919 Le cimetière gallo-romain de Chevrens, ct.de Genève, Anzeiger für Schweizerische Altertumskunde 21(neue Folge), 79-84.

RIEDER, K. & TILLMANN, A. 1995 Archäologie um Ingolstadt, Hercynia, Kipfenberg.

RIEDL, H. 1943 Spätrömische Gräber in Mautern an der Donau, Jahreshefte des Österreichischen Archäologischen Instituts 35, 65-95.

RIHA, E. 1979 Die römischen Fibeln aus Augst und Kaiseraugst, Forschungen in Augst 3, Rörmuseum Augst, Augst.

RIHA, E. 1990 Der römische Schmuck aus Augst und Kaiseraugst, Forschungen in Augst 10, Rörmuseum Augst, Augst.

RIHA, E. 1994 Der römischen Fibeln aus Augst und Kaiseraugst: Die Neufunde seit 1975, Forschungen in Augst 18, Rörmuseum Augst, Augst.

ROACH SMITH, C. 1859 Illustrations of Roman London, privately printed, London.

ROBER, R. 1983 Le Sanctuaire Gallo-Romain de Matagna-la-Grande, Archaeologia Belgica 252, Brussel.

RÖDER, F. 1930 Typologisch-chronologische Studien zu Metallsachen der Völkerwanderungszeit, Jahrbuch des Provinzial Museums zu Hannover Neue Folge 5, 3-128.



ROLLAND, H. 1949 Premières Découvertes à Sisteron, Gallia 7, 81-7.

ROOSENS, H. 1962 Quelques mobiliers funéraires de la fin de l'époque Romain dans le Nord de la France, Dissertationes Archaeologicae Gandenses VII, Bruges.

ROTH, H. & WAMERS, E. 1984, Hessen im Frühmittelalter: Archäologie und Kunst, Thorbecke, Sigmaringen.

ROTH-RUBI, K. & SENNHAUSER, H. 1987 Verenamünster Zurzach: Ausgrabungen und Bauuntersuchung 1, Römische Strasse und Gräber, Verlag der Fachvereine, Zurich.

ROWLEY, T. & BROWN, L. 1981 Excavations at Beech House Hotel, Dorchester on Thames 1972, Oxonensia XLVI, 1-55.

RUDD, G. & DAINES, C. 1971 Roman Burials at St. Neots, Hunts. Proceedings of the Cambridge Antiquaries Society LXIII, 1-8.

RUPRECHTSBERGER, E. 1982 Römerzeit in Linz, Linzer Archäologische Forschungen Band 11, Linz.

RUPRECHTSBERGER, E. 1996 Ein spätantikes Säuglingsgrab mit reichen Beigaben aus Lentia/Linz, Linzer Archäologische Forschungen Band 24, Gutenberg-Webering, Linz.

RYAN, N. 1988 4th century coin finds from Roman Britain: A computer analysis, British Archaeological Report 183, Oxford.

SAGE, W. 1976 Die Ausgrabungen in St. Peter zu Straubing, Jahresbericht des Historischen Vereins für Straubing und Umgebung 79, 113-128.

SAGI, K. 1981 Das römische Gräberfeld von Keszthely-Dobógo, Akadémiai Kiadó, Budapest.

SCHERRER, P. 1991 Landeshauptstadt St. Pölten, Österreichisches Archaeologisches Institut Sonderschriften Band 22, Wien.

SCHICKER, J. 1933 Der spätrömische Christenfriedhof am Legionslager Lauriacum, 117-144 in Der Römische Limes in Österreich XVII, Rudolf M. Rohrer, Wien.

SCHLEIERMACHER, M. 1951 Der obergermanisch Limes und spätrömisches Wehranlagen am Rhein, Bericht der Römisch-Germanischen Kommission 34, 133-84.



- SCHLEIERMACHER, M. 1993 Die römischen Fibeln von Kempten-Cambodunum, Materialhefte zur Bayerischen Vorgeschichte 63, Michael Lassleben, Kallmünz.
- SCHNEIDER-SCHNEKENBURGER, G. 1980 Churrätien im Frühmittelalter, Münchner Beiträge zur Vor- und Frühgeschichte 26, C.H.Beck, München.
- VON SCHNURBEIN, S. 1977 Das römische Gräberfeld von Regensburg, Materialhefte zur Bayerischen Vorgeschichte Reihe A Band 31, Michael Lassleben, Kallmünz.
- VON SCHWERZENBACH, K. 1909 Ein Gräberfeld von Brigantium, Jahrbuch für Altertumskunde 3, 98-116.
- SCHOENBERGER, H. ed. 1968 Kastell Oberstimm: Die Grabungen von 1968 bis 1971, Limesforschungen 18, Gebr.Mann, Berlin.
- SCHULER, R. 1996 Nécropoles et sépultures d' époque romaine à Beauvais, Revue Archéologique de Picardie 3-4, 1995.
- SCHULZE, M. 1978 Zur Interpretation spätkaiserzeitlicher Glasperlen, Archäologisches Korrespondenzblatt 8, 51-68.
- SCHULZE-DÖRLAMM, M. 1990 Die spätrömischen und frühmittelalterlichen Gräberfelder von Gondorf, Steiner, Stuttgart.
- SEILLIER, C. 1983 Le Nord de la France de Theodose à Charles Martel, Association région Nord-Pas de Calais, Lille.
- SEILLIER, C. 1989 Les Tombes de transition du cimetière germanique du Vron (Somme), Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz 36, 599-634.
- SHANKS, M. & TILLEY, C. 1987 Social Theory & Archaeology, Polity Press, Cambridge.
- SHENNAN, S. 1989 Archaeological Approaches to Cultural Identity, Unwin Hyman, London.
- SIMPSON, C. 1976 Belt buckles & strap ends of the Later Roman Empire: a preliminary survey of several new groups, Britannia 7, 192-223.
- SNAPE, M. 1993 Roman Brooches from North Britain, British Archaeological Report 235, Oxford.



- SOMMER, M. 1984 Die Gürtel und Gürtelbeschläge des 4. und 5. Jahrhunderts im Römischen Reich, Bonner Hefte zur Vorgeschichte 22, Bonn.
- SOUTHERN, P. & DIXON, K. 1996 The Late Roman Army, Batsford, London.
- STOUT, A. 1994 Jewellery as a symbol of status in the Roman Empire, 77-100 in Sebesta, J. & Bonfante, L., The World of Roman Costume, University of Wisconsin Press, Madison.
- SWIFT, E. 1994 Regionality in Late Roman Bracelets, University of London B.A. dissertation, unpublished.
- SWIFT, E. 1995 A study of Regionality in Bracelets from the 1st-5th century A.D., University of London M.A. dissertation, unpublished.
- TEMPELMANN-MACZYNSKA, M. 1985 Perlen im mitteleuropäischen Barbaricum, Römisch-Germanische Forschungen Band 43, Philipp von Zabern, Mainz.
- THALLER, H. 1950 Vom Gräberfeld bei Mautern an der Donau, Jahreshefte des Österreichischen Archäologischen Instituts 38, 145ff.
- THEUNE-GROSSKOPF, B. 1995 Zwiebelknopffibeln und ihre Träger-Schmuck und Rangabzeichen, 77-108 in Die Schraube zwischen Macht und Pracht: Das Gewinde in der Antike, Landesmuseum Mainz, Jan Thorbecke Verlag, Sigmaringen.
- TOMLIN, R. 1976 Notitia Dignitatum Omnium, tam Civilium quam militarium, in Goodburn, R. & Bartholomew, P.eds., Aspects of the Notitia Dignitatum, British Archaeological Reports supplementary series 15, Oxford.
- TÓPAL, J. 1993 Roman Cemeteries of Aquincum, Pannonia: the Western Cemetery, Aquincum Nostrum, Budapest.
- VANVINCKENROYE, W. 1970 Enkele Romeinse Graven uit Tongeren, Provincial Gallo-Romeins Museum, Tongeren.
- VANVINCKENROYE, W. 1984 De Romeinse Zuidwest Begraafplaats van Tongeren, Provincial Gallo-Romeins Museum, Tongeren.
- VANVINCKENROYE, W. 1995 Laat-Romeins uit Tongeren, Limburg Jaargang LXXIV, 117-120.



VANVINCKENROYE, W. 1995b De Romeinse oostbegraafplaats van Tongeren, Limburg  
Jaargang LXXIV, 151-184.

VERMA, E. 1989 Ringschmuck mit Tierkopffenden in der Germania Libera, British  
Archaeological Reports International Series 507, Oxford.

VERMEULEN, F. 1986 The Roman Settlement and Cemetery at Asper, Scholae Archaeologicae  
5.

VERMEULEN, F. 1992 Tussen Leie en Schelde, Arch.Inventaris Vlanderen, Gent.

VETTERS, H. & KARNITSCH, P. et al, 1960 Plangrabungen aus den Jahren 1953-6,  
Forschungen in Lauriacum 8, Institut für Landeskunde von Oberösterreich, Linz

VOGT, E. 1948 Der Lindenhof in Zürich, Orell Fussli, Zürich.

WALKE, N. 1965 Das römische Donaukastell Straubing-Sorviodurum, Limesforschungen Band  
3, Gebr.Mann, Berlin.

WALKER, S. 1995 Greek and Roman Portraits, British Museum Press, London.

WATKIN, W. 1886 Roman Cheshire: A description of Roman Remains in the county of  
Cheshire, privately printed, Liverpool.

WEBSTER, G. 1950 A Romano-British burial at Glaston, Rutlandshire. The Antiquaries Journal  
XXX, 72-4.

WEDLAKE, W. 1958 Excavations at Camerton, Somerset, Camerton Excavation Club,  
Camerton.

WENINGER, P. ed. 1973 Die Römer an der Donau. Noricum und Pannonien, Katalog Schloss  
Traun, Petronell.

WERNER, J. 1969 Der Lorenzberg bei Epfach, Münchner Beiträge zur Vor- und Frühgeschichte  
8, C.H. Beck, München.

WERNER, J. 1970 Die germanische Siedlung auf dem Gelände der Zeche Erin in Castrop-  
Rauxel, Bodenaltertümer Westfalen 12, 75-82.



- WERNER, J. 1980 Der goldene Armring des Frankenkönigs Childerich und die germanischen Handgelenkringe der jüngeren Kaiserzeit, Frühmittelalterliche Studien 14, 1-49.
- WEST, S. & PLOUVIEZ, J. 1976 The Romano-British site at Icklingham, East Anglian Archaeology 3, 63-126.
- WHEELER, R.E.M, 1923 Segontium and the Roman Occupation of Wales, Cambridge University Press, Cambridge.
- WHEELER, R. & WHEELER, T. 1932 Report on the Excavation of the prehistoric & Roman Site at Lydney Park, Society of Antiquaries Research Report 1932, Society of Antiquaries, London.
- WHEELER, R. & WHEELER, T. 1936 Verulamium: A Belgic & Two Roman Cities, Society of Antiquaries Research Report 1936, Society of Antiquaries, London.
- WHITWELL, J. 1966 Archaeological Notes 1964, Lincolnshire History & Archaeology 1, 33-53.
- WILDE, J. 1985 The Clothing of Britannia, Gallia Belgica and Germania Inferior. Aufstieg und Niedergang der Römischen Welt II 12.3, 362-422.
- WILKES, J. 1961 Excavations in Housesteads Fort, Archaeologia Aeliana Fourth Series 39, 279-300.
- WILLEMS, W. 1983 Regional Developments on the Imperial Frontier, 105-28 in Brandt & Slofstra eds., Roman & Native in the Low Countries, British Archaeological Reports International Series 184, Oxford.
- WILLIAMS, J. 1976 Excavations on a Roman site at Overstone, near Northampton, Northamptonshire Archaeology XI, 100-133.
- WINKELMANN, F. 1926 Eichstätt: Sammlung der Historischen Vereins, Kataloge West und Süddeutscher Altertumssammlungen VI, Römisch-Germanische Kommission, Frankfurt am Main.
- WOIMANT, G. 1995 L'Oise: Carte Archéologique de la Gaule 60, Academie des Inscriptions et Belles Lettres, Paris.
- WOODWARD, A. & LEACH, P. 1993 The Uley Shrines, English Heritage/British Museum Press, London.



WOOLF, G. 1991 Imperialism, empire and the integration of the Roman economy, World Archaeology 23, 283-293.

YOUNG, C. 1981 The late Roman mill at Ickham and the Saxon shore, 32-40 in Collectanea Historica: Essays in memory of Stuart Rigold, Kent Archaeological Society, Maidstone.

ZEISS, H. 1941 Die germanischen Grabfunde des frühen Mittelalters zwischen Seine und Loiremündung, Bericht der Römisch-Germanischen Kommission 31, 5-74.



## APPENDIX 1: LIST OF SITES

**Abbreviations: RGZM Römisch-Germanisches Zentralmuseum Mainz**  
**MAN St. Ger. Musée des Antiquités Nationales, St. Germain-en-Laye**

### **Abbeville**

Roosens, H. 1962  
Pilloy, J. 1886  
MAN St. Ger.

### **Abbeville-Homblières**

Böhme, H. 1974

### **Abingdon**

Cool, H. 1983

### **Aisne**

Musée de Laon

### **St. Albans**

Wheeler, R. & Wheeler, T. 1936  
Frere, S. 1984  
Frere, S. 1972  
Cool, H. 1983

### **Aldborough, North Yorks.**

Bishop, M. 1996

### **Altbachtal, near Trier**

Rheinisches Landsmuseum Trier

### **Altenstadt**

Keller, E. 1971  
Overbeck, B. 1982

### **Amay, region Liège**

Musée Curtius, Liège

### **Amiens**

Canny, D. 1992  
Dilly, G. 1978

### **Ancaster, Lincs.**

Cool, H. 1983

### **Villa d'Ancy, (Limé) Aisne**

Moreau, F. 1887  
MAN St. Ger.

### **St. Andrä am Zicksee, VB Neusiedl**

Adler, H. ed. 1990  
Adler, H. ed. 1995

### **Antau, (Hirm-Antau) VB Mattersburg**

Adler, H. ed. 1990

### **Apetlon, VB Neusiedl-am-See**

Adler, H. ed. 1982  
Adler, H. ed. 1989

Adler, H. ed. 1990

### **Arbon TG**

Overbeck, B. 1982

### **Ashdown**

Cool, H. 1983

### **Ashley Camp, Ashley, Hants.**

Cool, H. 1983

### **Aspelt (Luxembourg)**

Musée d'Histoire et d'Art, Luxembourg

### **Asper**

Vermeulen, F. 1986

### **Asperden, Kr. Kleve**

Hinz, H. & Hömberg, I. 1968

### **Atzgersdorf**

RGZM illustrated in inventory book

### **Augst**

Riha, E. 1979  
Riha, E. 1990  
Riha, E. 1994

### **Augsburg**

Keller, E. 1971

### **Aulnizeux**

Böhme, H. 1974

### **Aulnay-sur-Marne**

Brisson, A. et al. 1967

### **Avenches**

Bögli, H. 1984  
Guisan, M. 1975

### **Avernas**

Musée Curtius, Liège

### **Azlburg, Straubing**

Prammer, J. 1985a  
Prammer, J. 1989  
Menghin, W. 1990

### **Bâlon, nr Stenay, Meuse**

Liénard, F. 1885

### **Bad Deutsch-Altenburg**

Adler, H. ed. 1987  
Adler, H. ed. 1988  
Adler, H. ed. 1989

### **Bad Ragaz, Bez. Sargans**

Overbeck, B. 1982



**Balzers, Liechtenstein**

Overbeck, B. 1982

**Bardouville, Aisne**

De Bouard, M. 1970

**Barnwood, near Gloucester**

Clifford, E. 1930

**Barrington, Cambs.**

Fox, C. 1923

**Bartomley, Prestbury, Cheshire**

Watkin, W. 1886

**Barton Hill, Dorset,**

British Museum

**Basel**

Degen, R. 1957

Laur-Belart, R. 1959

Degen, R. 1964

**Batászek Kved, Kom. Tolna**

Engemann, J. & Rüger, C. 1991

**Bath, Avon**

Cool, H. 1983

Cunliffe, B. ed. 1988

**Baugy**

Ettlinger, E. 1973

**Bavay**

Musées Royaux d'Art et d'Histoire, Bruxelles

**Beaulieu, near Bardouville**

Dollfus, M. 1973

**Beauvais**

Schuler, R. 1995

MAN St. Ger.

**Bellenberg**

Mackensen, M. 1995

**Berg**

Keller, E. 1971

**Bernhardsthal, Mistelbach**

Adler, H.ed. 1989

Adler, H.ed. 1994

**Bernex**

Drack, W. 1966/7

**Berschis, nr Flums, Bez. Sargans**

Overbeck, B. 1982

**Besançon**

Lerat, L. 1956

**Biesme**

Brulet, R. 1969

**Bingen**

Behrens, G. 1920

**Bitburg (nr Trier)**

Frey, M., Gilles, K & Thiel, M. 1995

**Bletsoe, Bedfordshire**

Dawson, M. 1994

**Bonaduz**

Schneider-Schnekenburger, G. 1980

**Bonn**

Horn, G. 1987

**Borg. Gem. Wald**

Rheinisches Landesmuseum Trier

**Boulogne**

Seillier, C. 1983

Belot, E. & Canut, V. 1993

**Bourton-on-the-Water**

Donovan, H. 1934

**Boxmoor**

Neal, D. 1974/6

**Braives**

Brulet, R. 1981

**Brampton, Norfolk**

Cool, H. 1983

**Bregenz**

Jacobs, J. & Von Schwerzenbach, K. 1910

Von Schwerzenbach, K. 1909

Overbeck, B. 1982

Pröttel, P. 1988

**Breisach am Rhein**

Klein, M. et al. 1987

**Breitenbrunn, VB Eisenstadt-Umgebung**

Adler, H.ed. 1985/6

**Brény, Aisne**

Moreau, F. 1881

MAN St. Ger.

**Briarres-sur-Essone, cant. Puiseaux**

Zeiss, H. 1941

**Saint-Brieuc**

Galliou, P. 1974

**Brigstock, Northamptonshire**

Greenfield, E. 1963



**Brigham, West Cumberland**  
Haverfield, F. 1919

**Brough, West Morland**  
British Museum

**Bruck-an-der-Leitha**  
Adler, H. ed. 1990

**Bruckneudorf, VB Neusiedl am See**  
Adler, H. ed. 1977  
Adler, H. ed. 1985/6

**Brumath, Grafenburg, Alsace**  
Pétry, F. 1972

**Brunehaut-Liberchies**  
Mertens, J. & Brulet, R. 1974

**Brunn am Gebirge**  
Farka, C. 1976

**Buchendorf**  
Keller, E. 1971

**Buda-Keszi**  
Van Buchem, H. 1973

**Budapest (Aquincum)**  
Topal, J. 1993

**Bürgli (unteres), near Schwaderloch, Switz.**  
Drack, W. 1980

**Burgh Castle**  
Morris, A. 1949

**Burgheim**  
Keller, E. 1971

**Burghöfe, L.kr Donauwörth**  
Keller, E. 1971

**Bury St. Edmunds**  
Hattatt, R. 1987

**Butzweiler near Trier**  
Rheinisches Landesmuseum Trier

**Cadbury Castle**  
Fox, A. 1952

**Caernarfon (Segontium)**  
Allason-Jones, L. 1993  
Wheeler, R. 1923  
Casey, P. & Davies, J. 1993

**Caerleon**  
Boon, G. unpublished  
Nash-Williams, V. 1932  
Brewer, R. 1986

Fox, A. 1940

**Caerwent**  
Cool, H. 1983  
Newport Museum & Art Gallery

**Caistor-by-Norwich**  
Cool, H. 1983

**Caister-by-Yarmouth**  
Darling, M. & Gurney, D. 1993

**Calfriesen, Kr.Schanfigg**  
Overbeck, B. 1982

**Cambridge**  
Cool, H. 1983

**Camerton, near Bath**  
Wedlake, W. 1958

**Canterbury**  
Cool, H. 1983  
Canterbury Archaeological Trust  
Blockley, K. et al.1995

**Caston, Norwich**  
Cool, H. 1983

**Chaffois (Doubs)**  
Lerat, L. 1956

**Chalon-sur-Saône**  
Feugère, M. 1977

**Chambres-du-Vivier (Oise)**  
MAN St. Ger.

**Champdolent, St. Germain-les-Corbeil**  
MAN St Ger.

**Champlieu**  
Woimant, G. 1995  
MAN St. Ger.

**Charnay**  
Feugère, M. 1977

**Chartres**  
Musée des Beaux-Arts, Chartres  
Maison d'Archéologie, Chartres  
Joly, D. et al.1988

**Chartham, Kent**  
Canterbury Archaeological Trust

**Cheapside, London**  
British Museum

**Chesterford, Essex**  
British Museum



**Chesterholm (Vindolanda)**

Snape, M. 1993

Bidwell, P. 1985

**Chesterton, Oxon.**

Cool, H. 1983

**Chevincourt, Oise**

MAN St. Ger.

**Chevrens, ct.de Genève**

Reber, B. 1919

**Chichester**

Down, A. 1974

Down, A. &amp; Rule, M. 1971

Down, A. 1978

**Chilgrove, Chichester**

Down, A. 1979

**Chouy, Aisne**

Moreau, F. 1884

MAN St. Ger.

**Chur**

Overbeck, B. 1982

Hochuli-Gysel, A. et al. 1986

Schneider-Schnekenburger, G. 1980

**Cirencester**

Mackreth, D. 1982

Cool, H. 1983

**Colchester**

Brailsford, J. 1951

Crummy, N. 1983

Cool, H. 1983

British Museum

**Coldham Common, Cambs.**

British Museum

**Cold Kitchen Hill, Brixton Deverill**

Cool, H. 1983

**Fôret de Compiègne**

MAN St. Ger.

**Conflans-sur-Seine**

MAN St. Ger.

**Corbridge**

Snape, M. 1993

**Cortrat, dep. Loiret**

Böhme, H. 1974

France-Lanord, A. 1963

**Coventina's Well**

Allason-Jones, L. &amp; McKay, B. 1985

**Cricklade, Wilts.**

British Museum

**Cristnach**

Musées Royaux d'Art et d'Histoire, Bruxelles

**Dalheim**

Musée d'Histoire et d'Art, Luxembourg

Mötefindt, H. 1925

RGZM

**Damery, Marne**

Brisson, A. et al. 1969

**Denton, Lincs**

Cool, H. 1983

**Deurne, N. Brabant, NL**

Klumbach, H. 1973

**Deutschkreutz, VB Oberpullendorf**

Adler, H. 1982

**St. Donat. VB St. Veit an der Glan**

Adler, H.ed., 1984

**Donnerskirchen, VB Eisenstadt-****Umgebung**

Adler, H. 1985

**Dorchester, Dorset**

Cool, H. 1983

**Dorchester on Thames**

Kirk, J. &amp; Leeds, E. 1952/3

Rowley, T. &amp; Brown, L. 1981

**Dormagen (lower Rhine)**

Müller, G. 1979

**Douvrend, nr Dieppe**

Dollfus, M. 1973

**Dragonby, North Lincs.**

May, J. 1996

**Dudelange Mont-St. Jean (Luxembourg)**

Musée d'Histoire et d'Art, Luxembourg

**Dunapentele**

Kovrig, I. 1937

Alföldi, M. 1957

Bóna, I. &amp; Vágo, E. 1976

Landesmuseum Mainz

RGZM

**Dunstable**

Matthews, C. 1981

**Dunwich, Suffolk**

Cool, H. 1983



**East Anglia (arbitrary point)**

Hattatt, R. 1987

**Frankfurt-Ebel**

Schleiermacher, M. 1951

**Eching**

RGZM

Keller, E. 1971

**Ecoust-Saint-Mein**

Delmaire, R. & Notte, L. 1988

**Edelstal, VB Neusiedl am See**

Adler, H. ed., 1982

Adler, H. ed., 1988

**Ehrwald**

Adler, H. ed. 1984

**Eining**

Fischer, T. 1988

Keller, E. 1971

**Elton, Lincs.**

British Museum

**Erickstanebrae, Moffat, Dumfriesshire**

Van Buchem, H. 1973b

**Villers-Erquery**

Woimant, G. 1995

**Eschilleuses, near Pithiviers**

Flouest, M. 1887

**Etzersdorf**

Adler, H. 1979

**Evreux**

Fauduet, I. 1992

Dollfus, M. 1973

**Ewell, Surrey**

British Museum

**Exeter**

Holbrook, N. & Bidwell, P. 1991

Cool, H. 1983

**Exning, Suffolk**

British Museum

**Farmoor, Oxon.**

Lambrick, G. & Robinson, M. 1979

**Felixstowe**

British Museum

**Feltwell, Norfolk**

Cool, H. 1983

**Fifehead Neville, Dorset**

Cool, H. 1983

**Chameleux (Florenville)**

Doyen, M. 1987

**Föching, Ldkr. Miesbach**

Keller, E. 1971

**St. Martin-de-Fontenay, Calvados**

Pilet, C. 1994

**Fosse-Ribaudes NE Trouan**

Ravaux, J. 1992

**Frénouville**

Pilet, C. 1980

**Fridolfing**

Keller, E. 1971

**Froitzheim, Kr. Düren**

Barfield, L. 1968

**Füssen Bad Faulenbach**

Keller, E. 1971

**Furfooz**

Nenquin, J. 1953

**Fussach, Bez. Bregenz**

Overbeck, B. 1982

**Garenne-du-Roi, Oise**

MAN St. Ger.

**Gatcombe, near Bristol**

Branigan, K. 1977

**Gattendorf, VB Neusiedl am See**

Adler, H. ed. 1985/6

Adler, H. ed. 1994

**Gauting**

Keller, E. 1971

**Geer**

Van der Roest, J. 1994

**Gellep**

Behrens, G. 1919

**Gersheim**

RGZM illustrated in inventory book

**Girm, VB Oberpullendorf**

Adler, H. ed. 1990

Adler, H. ed. 1976

Braun, T. 1991/2



**Glaston, Rutlandshire**  
Webster, G. 1950

**Gloucester**  
Cool, H. 1983

**Godmanchester, Cambs.**  
Frend, W. 1968

**Göggingen**  
Keller, E. 1971

**Goldberg bei Turkheim**  
Moosdorf-Ottinger, I. 1981

**Kobern-Gondorf**  
Schulze-Dörlamm, M. 1990

**Gräfelfing**  
Keller, E. 1971

**Great Chesterford**  
Cool, H. 1983

**Great Dunmow**  
Cool, H. 1983

**Grödig bei Salzburg**  
Hell, M. 1959

**Grossprüfening (Umland Regensburg)**  
Fischer, T. 1990

**Gross-Gerau**  
Jährling, W. 1985

**Grünwald**  
Keller, E. 1971

**Guilden Morden**  
Cool, H. 1983

**Guillacourt**  
Legros, V. unpublished

**Bürgle bei Gundremmingen**  
Bersu, G. 1964

**Günzburg**  
Keller, E. 1971

**Hambledon Hill, Hants**  
British Museum

**Ham Hill**  
Cool, H. 1983

**Hannut**  
Musée Curtius, Liège

**Hastière**  
Musées Royaux d'Art et d'Histoire, Bruxelles

**Hechendorf**  
Keller, E. 1971

**Hemel Hempstead**  
Neal, D. 1974  
Neal, D. 1974/6

**Herstal, Liège**  
Musée Curtius, Liège

**Hockwald-cum-Wilton, Norfolk**  
Cool, H. 1983

**Hod Hill**  
British Museum

**Hof am Leithagebirge**  
Adler, H. ed. 1979

**Honington, Lincs.**  
Cool, H. 1983

**Housesteads**  
Wilkes, J. 1961

**Hucclecote, Glos.**  
Cool, H. 1983

**Hundsheim, VB Bruck an der Leitha**  
Adler, H. ed. 1989

**Hungary (arbitrary point, doubtful provenance)**  
RGZM

**Icklingham**  
Hattat, R. 1985  
West, S. & Plouviez, J. 1976  
Cool, H. 1983  
British Museum

**Ickham**  
Young, C. 1981

**Ijzendoorn bij Ochten NL**  
Lunsingh-Schleurleer, D. 1987

**Iliats, nr Samson, Namur**  
Dasnoy, A. 1969

**Illmitz, VB Neusiedl-am-see**  
Adler, H.ed. 1989  
Adler, H.ed. 1990

**Illzach**  
Musée Historique de Mulhouse

**Irgenhausen nr Pfäffikon, Schweiz**  
Meyer, E. 1969

**Irrsdorf**  
Hell, M. 1943b



**Isny, Kr. Ravensburg**

Garbsch, J. 1971

**St. Ives, Huntingdonshire**

Green, H. 1959

**Jois, VB Neusiedl am See**

Adler, H. ed. 1988

**Jordan's Hill, Preston, Dorset**

Drew, C. 1931

**Junkersdorf near Köln**

Römische-Germanisches Museum Köln

**Katwyk, from Meuse near**

Van Buchem card index, GM Kam Museum,  
Nijmegen

**Kellmünz**

Mackensen, M. 1995

**Kelheim-Affecking**

Keller, E. 1971

**Kempten (Cambodunum)**

Schleiermacher, M. 1993

**Keszthely-Dobogó**

Sagi, K. 1981

**Kingscote, Glos.**

Cool, H. 1983

**Kirchheim bei München**

Keller, E. 1989

**Kirchlibuck, Switz.**

Drack, W. 1980

**Kirmington, Lincs.**

Whitwell, J. 1966

Cool, H. 1983

**Kleinaitingen**

Keller, E. 1971

**Klosterneuburg**

Neugebauer, J. & Neugebauer, C. 1986

**Köln (doubtful provenance)**

RGZM

**Köln**

Behrens, G. 1919

Fremersdorf, F. 1928

Van Buchem, H. 1970

Friedhoff, U. 1991

Päffgen, B. 1992

Carroll-Spillecke, M. 1993

Römisch Germanisches Museum, Köln

RGZM, illustrated in inventory book

Van Buchem card index, GM KAM Museum

**Königsbrunn**

Keller, E. 1971

**Krefeld-Gellep**

Pirling, R. 1966

Pirling, R. 1974

Pirling, R. 1979

Pirling, R. 1989

**Künzing, Ldkr. Deggendorf, Niederbayern**

Behling, U. 1964

Keller, E. 1971

Fischer, T. 1988

**La Fortelle, Oise**

MAN St. Ger.

**Lampertheim am Rhein**

Behn, F. 1935

Koch, A. 1937

**Langweid**

Keller, E. 1971

**Lankhills, Winchester**

Clarke, G. 1976

**Lauriacum (Enns)**

Schicker, J. 1933

Vetters, H. & Karnitsch, P. et al. 1960

Kloiber, A. 1962

Jobst, W. 1975

Adler, H. ed. 1983

**Lavoye, near Clermont, Meuse**

Liénard, F. 1884

**Leicester**

Kenyon, K. 1948

Cool, H. 1983

**Leithaprodersdorf, VB Eisenstadt-  
Umgebung**

Adler, H. ed. 1993

**Les Rossignols, Oise**

MAN St. Ger.

**Liberchies**

Brulet, R. 1995

**Lincoln**

British Museum

**Lindau-Aeschach**

Overbeck, B. 1968

**Linz**

Eckhart, L. 1964

Ruprechtsberger, E. 1996

Karnitsch, P. 1972



**Lisieux**  
Service D'Archéologie, Calvados

**London**  
Roach Smith, C. 1859  
Cool, H. 1983  
Museum of London  
British Museum

**Longues Raies, de Soissons**  
Boulanger, C. 1902

**Lorenzberg bel Epfach**  
Werner, J. 1969

**Loretto, VB Eisenstadt-Umgebung**  
Adler, H. ed. 1989

**Lowbury Hill, near Aldworth, Berkshire**  
Atkinson, D. 1916

**Lower Hacheston**  
Hattat, R. 1985

**Luxembourg (no further provenance)**  
Musée d'Histoire et d'Art, Luxembourg

**Luxembourg Bonnevoie-Kaltreis**  
Musée d'Histoire et d'Art, Luxembourg

**Lydney**  
Wheeler, R.E.M. & T.V. 1932

**Lympne**  
British Museum

**Lyon provenance locale**  
Boucher, S. Perdu, G. & Feugère, M. 1980

**Maastricht**  
Sectie Archeologie Gemeente Maastricht

**Mailly-le-Camp NW Trouan**  
Ravaux, J. 1992

**Mainz**  
Mötefindt, H. 1916

**Area of Mainz (arbitrary point, doubtful provenance)**  
Lindenschmit, L. 1881

**Mainz**  
Landesmuseum Mainz  
RGZM illustrated in inventory book  
MAN St. Ger.

**Maising**  
Keller, E. 1971

**Mamer (Luxembourg)**

Musée d'Histoire et d'Art, Luxembourg

**Manching (Donau/Ingolstadt)**  
Rieder, K. & Tillmann, A. 1995

**Mandeure**  
Lerat, L. 1957  
Lerat, L. 1956

**Mangolding (Umland Regensburg)**  
Fischer, T. 1990

**Mannersdorf am Leithagebirge**  
Adler, H.ed. 1979

**Marne (arbitrary point)**  
MAN St. Ger.

**Marteville**  
Loizel, M. 1977

**Matagne-la-Grande**  
Rober, R. 1983

**Maters, Val Oise**  
RGZM illustrated in inventory book

**Mautern an der Donau**  
Riedl, H. 1943  
Thaller, H. 1950

**Mayen**  
Habery, W. 1942

**Meaux**  
Landais, H. & Giraud, M. 1984

**Metz**  
Cüppers, H.et al. 1983

**Mézières**  
Lemant, J. 1974

**Kirchdorf-Micheldorf**  
Abramic, M. & Kaschnitz, G. 1909

**Mijnsherenland, from Binnen-Maas**  
Burgers, J. 1968

**Mildenhall, Wilts.**  
Cool, H. 1983

**Mintraching (Umland Regensburg)**  
Fischer, T. 1990

**Mistelbach**  
Abramic, M. 1909

**Momalle, région Liege**  
Musée Curtius, Liège



**Monceau-le-Neuf**  
Aisne, Böhme, H. 1974

**Monkton, Thanet**  
Canterbury Archaeological Trust

**Mont-Berny, Fôret de Compiègne, Oise**  
MAN St. Ger.

**Mont-Chyprés, Oise**  
MAN St. Ger.

**Moosberg bei Murnau**  
Garbsch, J. 1966

**Morlanwelz**  
Brulet, R. 1995a

**Mühling, VB Scheibbs**  
Adler, H. ed. 1993

**München**  
Keller, E. 1971

**Münchhof, VB Neusiedl-am-See**  
Adler, H. ed. 1980  
Adler, H. ed. 1987  
Adler, H. ed. 1990  
Adler, H. ed. 1992

**Müngersdorf near Köln**  
Römisch-Germanisches Museum Köln

**Münchmünster (Donau/Ingolstadt)**  
Rieder, K. & Tillmann, A. 1995

**Naix, near Ligny, Meuse**  
Liénard, F. 1881

**Narborough, Norfolk**  
Cool, H. 1983

**Neckenmarkt, VB Oberpullendorf**  
Adler, H. ed. 1990

**Neerharen-Rekem**  
Inst. het. Arch. Patrimonium  
Musées Royaux d'Art et d'Histoire, Bruxelles

**St. Neots, Huntingdonshire**  
Rudd, D. & Daines, C. 1971

**Neuburg an der Donau**  
Keller, E. 1979

**Neuss**  
Härke, H. 1980

**Nickelsdorf, VB Neusiedl-am-See**  
Adler, H. ed. 1991

**Niederbieber, near Bonn**

Römisch-Germanisches Museum Köln

**Niederremmel, Kr. Bernkastel-W.**  
Böhme, H. 1980

**Nijmegen**  
Van Buchem, H. 1941  
Burgers, J. 1968  
GM Kam Museum, Nijmegen  
Van Buchem card index GM Kam Museum  
Steures, D. unpublished

**North-west France (arbitrary point)**  
MAN St. Ger.

**Norfolk (arbitrary point)**  
Hattatt, R. 1987

**Northchurch, Bulbourne valley**  
Neal, D. 1974/6

**Northern France (arbitrary point)**  
MAN St. Ger.

**Norton, Yorks.**  
British Museum

**Noyelles-sur-mer, baie de Somme**  
Piton, D. & Marchand, H. 1978

**Oberolm**  
RGZM illustrated in inventory book

**Obertraubling**  
Fischer, T. 1990  
RGZM illustrated in inventory book  
Keller, E. 1971

**Odiham, Hants.**  
Brailsford, J. 1951

**Otterfing**  
Keller, E. 1971

**Oudenburg**  
Mertens, J. & Van Impe, L. 1971

**Overton Down, Wilts.**  
Cool, H. 1983

**Overstone, Nhants.**  
Williams, J. 1976

**Pähl**  
Keller, E. 1971

**Paris**  
MAN St. Ger.  
Musée Carnavalet, 1985

**Parndorf, VB Neusiedl am See**  
Adler, H. ed. 1985/6



**Passau**  
Pröttel, P. 1988  
Fischer, T. 1988

**Pécs**  
Fulep, F. 1977

**Peiting**  
Keller, E. 1971

**Petronell (Carnuntum)**  
Nowotny, E. 1914  
Miltner, F. 1933  
Grünwald, M. 1947  
Kuchenbuch, F. 1954  
Adler, H. ed. 1979  
Adler, H. ed. 1986  
Adler, H. ed. 1988  
Adler, H. ed. 1989  
Adler, H. ed. 1991  
Adler, H. ed. 1993

**Pfaffenhofen**  
Keller, E. 1971

**Pfünz**  
Winkelmann, F. 1926

**Pierre-Solain, Le Manoir, Calvados**  
Musée Baron Gérard, Bayeux

**St. Pierre sur Dives, Calvados**  
Dolfuss, M. 1973

**Podersdorf am see, VB Neusiedl am See**  
Adler, H. 1990

**Poivres champ-la-cave NE Trouan**  
Ravaux, J. 1992

**St. Pölten**  
Scherrer, P. 1991  
Adler, H. ed. 1990

**Poltross Burn, Hadrian's Wall**  
Gibson, J. & Simpson, S. 1911

**Pont-Remy, La Vallée Valchanchie**  
Legros, V. unpublished

**Portchester Castle**  
Cunliffe, B. et al. 1975

**Potzham**  
Keller, E. 1971

**Potzneusiedl, MG Gattendorf-Neudorf**  
Adler, H. ed. 1982  
Adler, H. ed. 1985/6

**St. Vigor le Grand, Pouigny**

Marin, J. ed. 1990 & Musée Baron Gérard,  
Bayeux

**Poundbury**  
Farwell, D. & Molleson, T. 1993

**Purbach am Neusiedler See, Eisenstadt**  
Adler, H. ed. 1988

**Rankweil, Bez. Feldkirch**  
Overbeck, B. 1982

**Ratzendorf an der Traisen, VB St. Pölten**  
Adler, H. ed. 1989

**Redl**  
Keller, E. 1971

**Regensburg**  
Dietz, K. ed. 1979  
Von Schnurbein, S. 1977  
RGZM

**Reims**  
MAN St. Ger.  
Morin-Jean 1910

**Rekawinkel, VB Wien-Umgebung**  
Adler, H. ed. 1989

**Remagen**  
Reauleux, M. 1885

**Renansart, s.e du canton Ribemont**  
Pillooy, J. 1886

**Rheinberg, Kr. Moers**  
Binding, G. 1968

**Rheinhessen (arbitrary point)**  
RGZM

**Rhineland (arbitrary point, doubtful  
provenance)**  
Behn, F. 1913

**Rhineland (arbitrary point)**  
Römisch-Germanisches Museum Köln

**Richborough**  
Bushe-Foxe, J. 1928  
Bushe-Foxe, J. 1932  
Bushe-Foxe, J. 1949  
Cunliffe, B. 1968  
Cool, H. 1983  
Unpublished/ Bayley et al forthcoming

**Riekofen (Umland Regensburg)**  
Fischer, T. 1990



**Ringelsdorf**

Adler, H. ed. 1990

Adler, H. ed. 1992

Adler, H. ed. 1989

**Rochester, Kent**

Cool, H. 1983

Cool, H. 1981

**Roisin**

Musées Royaux d'Art et d'histoire, Bruxelles

**Rosport (Luxembourg)**

Musée d'Histoire et d'Art, Luxembourg

**Rotherley, near Rusholme Dorset/Wilts.**

Pitt-Rivers, W. 1888

**Rouen**

Musée des Antiquités Rouen

**Rouffy, Marne**

MAN St. Ger.

**Rushall Down, Wilts.**

Cool, H. 1983

**Ságvár**

Burger, A. 1966

**Salzburg**

Hell, M. 1909

**Salzburg-Klessheim**

Hell, M. 1943a

**Samson, Namur**

Dasnoy, A. 1969

**Sargans, Switz.**

Frei, B. 1971

**Savelborn ( Luxembourg)**

Musée d'Histoire et d'Art, Luxembourg

**Schaan**

Schneider-Schnekenburger, G. 1980

**Schaanwald, Liechtenstein**

Kellner, H. 1964

Overbeck, B. 1982

**Scheiben bei Judenberg**

Mell, R. 1910

**Schierstein im Rheingau**

Lindenschmit, L. 1900

**Schützen am Gebirge, VB Eisenstadt**

Adler, H. ed. 1989

**Schwaben arbitrary point**

Keller, E. 1971

**Schwadorf, VB Wien-Umgebung**

Adler, H. ed. 1985/6

**Sea Mills, Bristol/Glos.**

Boon, G. 1945

**Seebruck**

Keller, E. 1971

**Seestall**

Keller, E. 1971

**Seitenstetten**

Van Buchem, H. 1973

**Shakenoak**

Brodribb, A. et al. 1968

Brodribb, A. et al. 1971

Brodribb, A. et al. 1972

Brodribb, A. et al. 1973

Brodribb, A. et al. 1978

**Shernbourne, Norfolk**

Cool, H. 1983

**Shorden Brae**

Snape, M. 1993

**Silchester**

Cool, H. 1983

Boon, G. 1974

**Simbach, Ldkr. Pfarrkirchen**

Keller, E. 1971

**Sint Martens Latem, Brakel**

Vermeulen, F. 1992

**Solothurn**

Ettlinger, E. 1973

**Sommerein am Leithagebirge**

Menghin, O. & Seracsin, A. 1929

**Somogyzsil**

Burger, A. 1979

**South Shields**

Bidwell, P. & Speak, S. 1994

Allason-Jones, L. & Miket, R. 1984

**Spontin**

Dasnoy, A. 1965

**Springhead**

Penn, W. 1962

**Stadtbergen**

Keller, E. 1979

Keller, E. 1971



**Staines**

Crouch, K. 1976

**Stancombe, Glos.**

Cool, H. 1983

**Steeple Aston**

Cool, H. 1983

**Stephanskirchen**

Keller, E. 1971

**Stourpane**

British Museum

**Stowting**

Brailsford, J. 1951

British Museum

**Strasbourg**

Musée des Antiquités et d'Archéologie,

Strasbourg

Forrer, R. 1927

**Straubing**

Walke, N. 1965

Keller, E. 1971

Sage, W. 1976

Prammer, J. 1985

**Strood, Kent**

Cool, H. 1983

**Studland, Dorset**

Hattatt, R. 1982

**Suffolk (arbitrary point)**

Hattat, R. 1985

**Sulz im Wienerwald**

Adler, H.ed. 1987

**Sussex (arbitrary point)**

British Museum

**S. Wiltshire (arbitrary point)**

British Museum

**Tamins, Switz.**

Schneider-Schnekenburger, G. 1980

**Tarrant Hinton, Dorset**

British Museum

**Teffont Evias, Wilts.**

Cool, H. 1983

**Thames (arbitrary point)**

British Museum

**Tournai,**

Mötefindt, H. 1916

Cabuy, Y. 1992

Brulet, R. & Coulon, G. 1977

Brulet, R. 1995

Musée Archéologique, Tournai

**Tokod**

Mócsy, A. 1981

**Tongeren**

Musées Royaux d'Art et d'Histoire, Bruxelles

Musée Curtius, Liège

Vanvinckenroye, W. 1970

Vanvinckenroye, W. 1984

Vanvinckenroye, W. 1995a

Vanvinckenroye, W. 1995b

Gallo-Romeins Museum Tongeren

**Tongeren/Florenville**

Musées Royaux d'Art et d'Histoire, Bruxelles

**Totis (Táta)**

Röder, F. 1930

**Trier (doubtful provenance)**

Rheinisches Landesmuseum Trier

Loeschcke, S. 1925

Cüppers, H. et al. 1984

**Trier/environs**

Loeschcke, S. 1925

**Trier**

Van Buchem, H. 1966

Rheinisches Landesmuseum Trier

Rheinisches Landesmuseum Trier photos

items in private coll.

RGZM

Loeschcke, S. 1925

**Triesen, Liechtenstein**

Overbeck, B. 1982

**Tulln, Österreich**

Mayr, U. & Winkler, K. 1991

**Uley**

Woodward, A. & Leach, P. 1993

**Unterpetersdorf, VB Oberpullendorf**

Lackner, A. 1994

**Upper Upham**

Cool, H. 1983

**Vaduz**

Overbeck, B. 1982

**Valley**

Keller, E. 1971



**Velzeke**  
Velzeke Museum

**Vermand**  
Eck, T. 1891

**Vermand (doubtful provenance)**  
MAN St. Ger.

**Vert-la-Gravelle, arr.Chalon-sur-Marne**  
Lantier, R. 1948

**Vieil-Atre, Boulogne**  
Seillier, C. 1983

**Vienne**  
Boucher, S. 1971

**Vieux-Port, Eure**  
Dollfus, M. 1973

**Vieux-Mont, Cambronne-les-Ribecourt**  
Man St. Ger.

**Vilters, Bez. Sargans**  
Overbeck, B. 1982

**Virton**  
Masséart unpublished

**Virunum, Kärnten**  
Gugl, C. 1995

**Vohburg (Donau/Ingolstadt)**  
Rieder, K. & Tillmann, A. 1995

**Vorion near Trier**  
Rheinisches Landesmuseum Trier

**Vron**  
Seiller, C. unpublished

**Wagna**  
Adler, H.ed. 1982

**Wallsee, VB Amstetten**  
Adler, H. ed. 1991  
Adler, H. ed. 1985/6

**Waltenberg**  
Keller, E. 1971

**Walterdane-Helmsange (Luxembourg)**  
Musée d'Histoire et d'Art, Luxembourg

**Warlus, Pas-de-Calais**  
MAN St. Ger.

**Wasserbillig**  
Loeschcke, S. 1925  
Musée d'Histoire et d'Art, Luxembourg

**Water Newton**

**British Museum**

**Waudrez**  
Musées Royaux d'Art et d'Histoire, Bruxelles

**Wederath-Belgium**  
Haffner, A. 1980

**Weilheim**  
Keller, E. 1971

**Wessling**  
Keller, E. 1971

**West Dean, Hants.**  
Cool, H. 1983

**Widdersberg**  
RGZM illustrated in inventory book  
Keller, E. 1971

**Wielenbach**  
Keller, E. 1971

**Wien**  
Adler, H. ed. 1989

**Wiesbaden**  
RGZM illustrated in inventory book

**Wiggonholt, Sussex**  
Evans, K. 1974

**Wilzhofen**  
Keller, E. 1971

**Winchester**  
Hyde Historic Resource Centre, Winchester  
Cool, H. 1983

**Windisch**  
Mötefindt, H. 1916  
Ettlinger, E. 1973  
Meyer-Freuler, C. 1989  
Hartmann, M. 1992

**Winden-am-See, VB Neusiedl am See**  
Adler, H. ed. 1981  
Adler, H. ed. 1985/6

**Wittlich near Trier**  
Rheinisches Landesmuseum Trier

**Woodyates**  
Pitt-Rivers, W. 1892

**Woodcuts Common, Rushmore Park**  
Pitt-Rivers, W. 1887



**Woodeaton**

Young, C. 1981

Kirk, J. 1949

**Woolaston, Glos.**

Cool, H. 1983

**Worms**

RGZM illustrations in inventory book

**Wroxeter (Uriconium)**

Anderson, J. 1867

Cool, H. 1983

**Wycomb, Andersford, Glos.**

Rawes, B. 1980

**Yvelines, Mareil-sur-Mauldre**

MAN St. Ger.

**Zeche Erin, Castrop-Rauxel, Westfalen**

Werner, J. 1970

**Zerkegem-Jabbeke**

Van Doorselaer, A. et al. 1987

**Ziegetsdorf (Umland Regensburg)**

Fischer, T. 1990

**Zurich**

Vogt, E. 1948

Escher, K. 1930

**Zurndorf, VB Neusiedl am See**

Adler, H.ed. 1980

Adler, H.ed. 1988

Adler, H.ed. 1990

Adler, H.ed. 1992

**Zurzach**

Roth-Rubi, K. & Sennhauser, H. 1987



**Museums**

British Museum  
Gallo-Romeins Museum Tongeren  
GM Kam Museum Nijmegen  
Hyde Historic Resource Centre, Winchester (Tilling Bequest)  
Institut voor het.Arch. Patrimonium  
Landesmuseum Mainz  
Landesmuseum Trier  
Musée Archéologique, Tournai  
Musée Baron Gerard, Bayeaux  
Musée Curtius, Liège  
Musée d'Histoire et d'Art, Luxembourg  
Musée de Laon  
Musée des Antiquités et d'Archéologie, Strasbourg  
Musée des Antiquités Nationales, St. Germain-en-Laye  
Musée des Beaux-Arts, Chartres  
Musée Historique de Mulhouse  
Musée Royaux d'Art et d'Histoire, Bruxelles  
Museum of London  
Rheinisches Landesmuseum Trier  
Römisch-Germanisches Museum, Köln  
Römisch-Germanisches ZentralMuseum, Mainz  
Velzeke Museum

**Unpublished drawings & catalogues from museums**

Bayley, et. al forthcoming Richborough crossbow brooches (English Heritage)  
Boon, G. unpublished notes on crossbow brooch (courtesy of Newport Museum & Art Gallery)  
Musée des Antiquités, Rouen, material from Rouen  
Musée Historique de Mulhouse, material from Illzach  
Masséart, C. unpublished material from Virton  
Rheinisches Landesmuseum Trier, photographs of objects in private collections  
Römisch-Germanisches Zentralmuseum Mainz, illustrations in inventory book (mostly objects destroyed in 2nd World War).  
Van Buchem, H. illustrated card index of crossbow brooches in GM KAM Museum Nijmegen



**Unpublished material from recent or current excavations (archaeology units)**

Canterbury Archaeological Trust

Maison d'Archéologie, Chartres

Sectie Archeologie Gemeente Maastricht

Service d'Archéologie, Calvados (Lisieux)

**Other unpublished material**

Legros , V. unpublished illustrations & catalogue of brooches

Steures, D.unpublished late Roman cemeteries at Nijmegen

Seiller, C. unpublished material from Vron (dating for the Roman and later cemetery is published in Seiller, C. 1989)



## **APPENDIX 3: LIST OF TYPES USED IN THE ANALYSIS**

### **Abbreviations**

**RGZM Römisch-Germanisches Zentralmuseum Mainz**

**MAN St. Ger. Musée des Antiquités Nationales, St. Germain-en-Laye**

**RLT photos Rheinisches Landesmuseum Trier photographs of items in private collections**

### **notes**

1. Where a number is given after the grave number, e.g. grave 60 4, this refers to the illustration rather than the catalogue number, unless otherwise specified.
2. Small find numbers are used for Lankhills (Clarke 1979), however where the object is from one of the graves in Clarke's suggested foreign group the grave number is also given.
3. For beads, the reference is generally to the grave or necklace cat. no. etc. since beads are rarely given individual numbers in publications and the analysis does not use individual beads in any case.
4. Most finds from MAN St. Ger. do not have individual inventory numbers.

### **Crossbow brooches of type 1**

St. Albans, fig. 9 54, Frere, S. 1984

Altbachtal, nr. Trier, S.T. 11679, Rheinisches Landesmuseum Trier

Altbachtal, nr. Trier, S.T. 12222, Rheinisches Landesmuseum Trier

Amiens, fig. IX 63, Dilly, G. 1978

Amiens, plate XXIII, Canny, D. 1992

Apetlon, VB Neusiedl-am-see, Abb. 678, Adler, H.ed. 1990

Augst, Taf. 51 1451, Riha, E. 1979

Augst, Taf. 51 1452, Riha, E. 1979

Augst, Taf. 51 1453, Riha, E. 1979

Augst, Taf. 36 2725, Riha, E. 1994

Augst, Taf. 36 2726, Riha, E. 1994

Augst, Taf. 37 2729, Riha, E. 1994

Augsburg, Taf. 6 1, Keller, E. 1971

Augsburg, Taf. 6 5, Keller, E. 1971

Augsburg, Taf. 7 3, Keller, E. 1971

Azlburg, Straubing, Abb. 116, Prammer, J. 1989

Azlburg, Straubing, Taf. 7 mid R, Menghin, W. 1990

Bartomley, Prestbury, Cheshire, p. 804, Watkin, W. 1886

Basel, Abb. 48, Degen, R. 1964

Baugy VD, Taf. 16 12, Ettlinger, E. 1973

Bellenberg, Abb. 52 1, Mackensen, M. 1995

Besançon, plate XIX 319, Lerat, L. 1956

Bregenz, Abb. 3, Pröttel, P. 1988



Bregenz, SG814, Jacobs, J. & Von Schwerzenbach, K. 1910  
 Breisach am Rhein, Abb. 11 1, Klein, M. et al, 1987  
 Bruckneudorf, VB Neusiedl am See, Abb. 419, Adler, H.ed. 1985/6  
 Bruckneudorf, VB Neusiedl am See, Abb. 259, Adler, H.ed. 1977  
 Burghöfe, Mertingen, Donauworth, Taf. 10 13, Keller, E. 1971  
 Caernarfon (Segontium), fig. 53, Wheeler, R.E.M. 1923  
 Caerleon, 43, Boon, G. unpublished  
 Caerleon, fig. 32 11, Nash-Williams, V.E. 1932  
 Caerleon, fig. 55 24, Brewer, R. 1986  
 Caister-by-Yarmouth, fig. 40 8, Darling, M. & Gurney, D. 1993  
 Chaffois (Doubs), plate XIX 317, Lerat, L. 1956  
 Dalheim, 3-576, Musée d'Histoire et d'Art, Luxembourg  
 Dalheim, 3-577, Musée d'Histoire et d'Art, Luxembourg  
 Dalheim, 3-646, Musée d'Histoire et d'Art, Luxembourg  
 Dunapentele, XXXV, Kovrig, I. 1937  
 Dunapentele, Taf. LXXVIII 11, Alföldi, M. 1957  
 Ebel bei Frankfurt, Taf. 6, Schleiermacher, M. 1951  
 Edelstal, VB Neusiedl am See, Abb. 682, Adler, H.ed, 1982  
 Garenne-du-Roi, Oise, 13923, MAN St. Ger.  
 Göggingen, Taf. 9 7, Keller, E. 1971  
 Goldberg bei Turkheim, Taf. 1, Moosdorf-Ottinger, I. 1981  
 Kobern-Gondorf, Taf. 18 18, Schulze-Dörlamm, M. 1990  
 Grünwald, Taf. 29 5, Keller, E. 1971  
 Hof am Leithagebirge, Abb. 494, Adler, H.ed. 1979  
 Housesteads, fig. 3 1, Wilkes, J. 1961  
 Hungary (arbitrary point) doubtful provenance, 21400, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21412, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21414, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21415, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21441, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21442, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21449, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21450, RGZM  
 Illmitz, VB Neusiedl-am-see, Abb. 715, Adler, H.ed, 1990  
 Kelheim-Affecking, Taf. 46 6, Keller, E. 1971  
 Kellmünz, Abb. 52 2, Mackensen, M. 1995  
 Köln, Van Buchem card index, GM Kam Museum, Nijmegen  
 Kirchlibuck, Switz. p. 31 L, Drack, W. 1980  
 Köln, Taf. 23 2, Paffgen, B. 1992  
 Krefeld-Gellep, grave 1218, Pirling, R. 1966  
 Lankhills, Winchester, SF 532 grave 426, Clarke, G. 1976  
 Lauriacum (Enns), 226, Jobst, W. 1975



Lauriacum (Enns), 228, Jobst, W. 1975  
 Lauriacum (Enns), 229, Jobst, W. 1975  
 Lauriacum (Enns), 230, Jobst, W. 1975  
 Lauriacum (Enns), 231, Jobst, W. 1975  
 Lauriacum (Enns), 232, Jobst, W. 1975  
 Lauriacum (Enns), 233, Jobst, W. 1975  
 Lauriacum (Enns), 234, Jobst, W. 1975  
 Lauriacum (Enns), 235, Jobst, W. 1975  
 Lauriacum (Enns), 236, Jobst, W. 1975  
 Lauriacum (Enns), 237, Jobst, W. 1975  
 Lauriacum (Enns), 238, Jobst, W. 1975  
 Lauriacum (Enns), 240, Jobst, W. 1975  
 Lauriacum (Enns), 244, Jobst, W. 1975  
 Lauriacum (Enns), 254, Jobst, W. 1975  
 Linz, Taf. 93 1, Karnitsch, P. 1972  
 London, 438, Museum of London  
 London, 85. 108/1, Museum of London  
 Lorenzberg bei Epfach, Taf. 39 31, Werner, J. 1969  
 Loretto, VB Eisenstadt-Umgebung, Abb. 567, Adler, H. ed. 1989  
 Mainz, R4129, Landesmuseum Mainz  
 Manching (Donau) p. 211 Abb. 1 mid L, Rieder, K. & Tillmann, A. 1995  
 Mandeure, plate VII 161, Lerat, L. 1957  
 Mandeure, plate XIX 318, Lerat, L. 1956  
 Mannersdorf am Leithagebirge, Abb. 506, Adler, H.ed. 1979  
 Mannersdorf am Leithagebirge, Abb. 507, Adler, H.ed. 1979  
 Mintraching (Umland Regensburg), Taf. 176 D1, Fischer, T. 1990  
 Moosberg bei Murnau, Taf. 25 3, Garbsch, J. 1966  
 München-Moosach, Taf. 27 1, Keller, E. 1971  
 Münchmünster (Donau), p. 211 Abb. 1, Rieder, K. & Tillmann, A. 1995  
 Neuss, grave 3 fig. 16 6, Härke, H. 1980  
 Nijmegen, 714, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 716, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 721, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 729, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 734, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 4a, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 4b, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 40A, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 40D, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 2. 1952. 2, GM Kam Museum, Nijmegen  
 Passau, Taf. 49 mid, Fischer, T. 1988  
 Passau, Taf. 49 top, Fischer, T. 1988



Pécs, grave R151-63 1, Fülep, F. 1977  
 Pécs, grave R168 2, Fülep, F. 1977  
 Pécs, grave R170, Fülep, F. 1977  
 Pécs, grave R293, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 941, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 706, Adler, H.ed. 1993  
 Pfaffenhofen, Taf. 18 6, Keller, E. 1971  
 Poltross Burn, Hadrians Wall, fig. 20 6, Gibson, J. & Simpson, S. 1911  
 Purbach am Neusiedler see, Eisenstadt, Abb. 414, Adler, H.ed. 1988  
 Regensburg, grave 1101, Von Schnurbein, S. 1977  
 Regensburg, Taf. 165 13, Von Schnurbein, S. 1977  
 Regensburg, Taf. 183 18, Von Schnurbein, S. 1977  
 Regensburg, 6784, RGZM  
 Rhineland doubtful provenance, (arbitrary point) Abb. 10 (nr. 64), Behn, F. 1913  
 Richborough, 59, [288(7350272)] Bushe-Foxe, J. 1949 [& Bayley et al forthcoming]  
 Richborough, 81, [289(7351206)] Cunliffe, B. 1968 [ & Bayely et al forthcoming]  
 Richborough, 290(7351702), unpublished Bayely et al forthcoming  
 Richborough, 291(7350052), unpublished Bayely et al forthcoming  
 Richborough, 292(7350273), unpublished Bayely et al forthcoming  
 Richborough, 294(7350297), unpublished Bayely et al forthcoming  
 Richborough, 295(7350069), unpublished Bayely et al forthcoming  
 Richborough, 296(7350500), unpublished Bayely et al forthcoming  
 Richborough, 317(7350478), unpublished Bayely et al forthcoming  
 Richborough, 318(7350275), unpublished Bayely et al forthcoming  
 Richborough, 319(7350097), unpublished Bayely et al forthcoming  
 Richborough, 77, Cunliffe, B. 1968  
 Ringelsdorf, Abb. 874, Adler, H.ed, 1992  
 Schwaben, Taf. 8 2, Keller, E. 1971  
 Solothurn, Taf. 16 13, Ettlinger, E. 1973  
 South Shields, 3. 45, Allason-Jones, L. & Miket, R. 1984  
 South Shields, 3. 78, Allason-Jones, L. & Miket, R. 1984  
 Strasbourg, 18010, Musée des Antiquités et d'Archéologie, Strasbourg  
 Straubing, Taf. 48 12, Keller, E. 1971  
 Tournai, AM 739, Musée Archéologique, Tournai  
 Tongeren, I/0727, Musée Curtius, Liège  
 Tongeren, 4264, Gallo-Romeins Museum Tongeren  
 Trier, S.T. 12186, Rheinisches Landesmuseum Trier  
 Trier, S.T. 8318, Rheinisches Landesmuseum Trier  
 Trier, S.T. 8585, Rheinisches Landesmuseum Trier  
 Trier, inv.01, 398, Rheinisches Landesmuseum Trier  
 Trier, inv. 17, 519, Rheinisches Landesmuseum Trier  
 Trier, inv. 34, 106, Rheinisches Landesmuseum Trier



Trier, inv. 91, Rheinisches Landesmuseum Trier  
 Trier, RD. 73. 8 bottom R, RLT photos  
 Trier, RD. 73. 8 top R, RLT photos  
 Trier, 20561, RGZM  
 Trier, doubtful provenance, 17405b(156b), Cüppers, H.et al, 1984  
 Valley, Taf. 23 9, Keller, E. 1971  
 Vindolanda (Chesterholm), fig. 17 209, Snape, M. 1993  
 Virunum, Kärnten, Taf. 18 138, Gugl, C. 1995  
 Virunum, Kärnten, Taf. 33 216, Gugl, C. 1995  
 Vöhrburg (Donau), p. 211 Abb. 1, Rieder, K. & Tillmann, A. 1995  
 Wallsee, VB Amstetten, Abb. 1063, Adler, H.ed. 1991  
 Wederath-Belginum, Abb. 27, Haffner, A. 1980  
 Wessling, Taf. 37 12, Keller, E. 1971  
 Wien, Abb. 1406, Adler, H.ed. 1989  
 Winchester, cg 1396, Hyde Historic Resource Centre, Winchester

### **Type 1 Crossbow brooches with 3 egg or cone shaped knobs**

Augsburg, Taf. 6 5, Keller, E. 1971  
 Azlburg, Straubing, Abb. 116, Prammer, J. 1989  
 Bartomley, Prestbury, Cheshire, p. 804, Watkin, W. 1886  
 Bregenz, SG814, Jacobs & Von Schwerzenbach 1910  
 Burghöfe, Mertingen, Donauworth, Taf. 10 13, Keller, E. 1971  
 Dalheim, 3-646, Musée d'Histoire et d'Art, Luxembourg  
 Dunapentele, XXXV, Kovrig, I. 1937  
 Edelstal, VB Neusiedl am See, Abb. 682, Adler, H.ed, 1982  
 Göggingen, Taf. 9 7, Keller, E. 1971  
 Hof am Leithagebirge, Abb. 494, Adler, H.ed. 1979  
 Hungary (arbitrary point) doubtful provenance, 21400, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21414, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21449, RGZM  
 Kelheim-Affecking, Taf. 46 6, Keller, E. 1971  
 Köln, card index, Van Buchem card index, GM Kam Museum, Nijmegen  
 Köln, Taf. 23 2, Paffgen, B. 1992  
 Lauriacum (Enns), 228, Jobst, W. 1975  
 Lauriacum (Enns), 229, Jobst, W. 1975  
 Lauriacum (Enns), 232, Jobst, W. 1975  
 Lauriacum (Enns), 237, Jobst, W. 1975  
 Lauriacum (Enns), 236, Jobst, W. 1975  
 London, 85. 108/1, Museum of London  
 Loretto, VB Eisenstadt-Umgebung, Abb. 567, Adler, H. ed. 1989  
 Mannersdorf am Leithagebirge, Abb. 506, Adler, H.ed. 1979  
 München-Moosach, Taf. 27 1, Keller, E. 1971



Nijmegen, 729, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen E.IV 4b Van Buchems 1941 & GM Kam Museum, Nijmegen  
 Nijmegen G.N. 40A Van Buchems 1941 & GM Kam Museum, Nijmegen  
 Passau, Taf. 49 mid, Fischer, T. 1988  
 Passau, Taf. 49 top, Fischer, T. 1988  
 Pécs, grave R168 2, Fülep, F. 1977  
 Pécs, grave R170, Fülep, F. 1977  
 Pécs, grave R293, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 941, Adler, H.ed. 1991  
 Pfaffenhofen, Taf. 18 6, Keller, E. 1971  
 Regensburg, Taf. 165 13, Von Schnurbein, S. 1977  
 Regensburg, Taf. 183 18, Von Schnurbein, S. 1977  
 Rhineland doubtful provenance, (arbitrary point) Abb. 10 (nr. 64), Behn, F. 1913  
 Straubing, Taf. 48 12, Keller, E. 1971  
 Trier, S.T. 8318, Rheinisches Landesmuseum Trier  
 Trier, inv. 91, Rheinisches Landesmuseum Trier  
 Trier, 20561, RGZM  
 Trier, 17405b(156b), Cüppers, H.et al, 1984  
 Valley, Taf. 23 9, Keller, E. 1971  
 Virunum, Kärnten, Taf. 18 138, Gugl, C. 1995  
 Wessling, Taf. 37 12, Keller, E. 1971  
 Wien, Abb. 1406, Adler, H.ed. 1989

#### **Type 1 Crossbow brooches with 3 faceted knobs**

Bregenz, Abb. 3, Pröttel, P. 1988  
 Breisach am Rhein, Abb. 11 1, Klein, M.et al, 1987  
 Caerleon, fig. 32 11, Nash-Williams, V.E. 1932  
 Krefeld-Gellep, grave 1218, Pirling, R. 1966  
 Lauriacum (Enns), 233, Jobst, W. 1975  
 Lauriacum (Enns), 240, Jobst, W. 1975  
 Lauriacum (Enns), 254, Jobst, W. 1975  
 Mintraching (Umland Regensburg), Taf. 176 D1, Fischer, T. 1990  
 Nijmegen, G.N. 40D, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 2. 1952. 2, GM Kam Museum, Nijmegen  
 Pécs, grave R151-63 1, Fülep, F. 1977  
 Richborough 7350273 Bayley et al forthcoming  
 Schwaben, Taf. 8 2, Keller, E. 1971  
 Tournai, AM 739, Musée Archéologique, Tournai

#### **Type 1 crossbow brooches with a10 foot**

Lauriacum (Enns), 233, Jobst, W. 1975  
 Lauriacum (Enns), 235, Jobst, W. 1975



München-Moosach, Taf. 27 1, Keller, E. 1971  
 Nijmegen, 714, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Passau, Taf. 49 mid, Fischer, T. 1988  
 Pécs, grave R293, Fülep, F. 1977  
 Pfaffenhofen, Taf. 18 6, Keller, E. 1971  
 Regensburg, grave 1101, Von Schnurbein, S. 1977  
 Richborough, 59, [288 (7350272)] Bushe-Foxe. J. 1949 [& Bayley et al forthcoming]  
 Solothurn, Taf. 16 13, Ettlinger, E. 1973  
 Vöhrburg (Donau), p. 211 Abb. 1, Rieder, K. & Tillmann, A. 1995  
 Wessling, Taf. 37 12, Keller, E. 1971

#### **Type 1 crossbow brooches with a2/d1 bow decoration**

Hungary (arbitrary point) doubtful provenance, 21442, RGZM  
 Mannersdorf am Leithagebirge, Abb. 506, Adler, H.ed. 1979  
 Moosberg bei Murnau, Taf. 25 3, Garbsch, J. 1966  
 Nijmegen, 2. 1952. 2, GM Kam Museum, Nijmegen  
 Pécs, grave R168 2, Fülep, F. 1977  
 Pécs, grave R170, Fülep, F. 1977  
 Purbach am Neusiedler see, Eisenstadt, Abb. 414, Adler, H.ed. 1988  
 Virunum, Kärnten, Taf. 18 138, Gugl, C. 1995  
 Wessling, Taf. 37 12, Keller, E. 1971

#### **Crossbow brooches of type 2i**

Apetlon, VB Neusiedl-am-see, Abb. 667, Adler, H.ed. 1982  
 Chalon, 108, Feugère, M. 1977  
 Champlieu, 14333, MAN St. Ger.  
 Gunzburg, Taf. 12 1, Keller, E. 1971  
 Krefeld-Gellep, grave 1117, Pirling, R. 1966  
 Krefeld-Gellep, grave 1609, Pirling, R. 1974  
 Lankhills, Winchester, SF 121 grave 106, Clarke, G. 1976  
 Lauriacum (Enns), 243, Jobst, W. 1975  
 Lauriacum (Enns), 251, Jobst, W. 1975  
 Meaux, p. 199 top, Landais & Giraud, 1984  
 Nijmegen, R.M.O.L.Vst 4, Van Buchems card index, GM Kam Museum, Nijmegen  
 Oudenburg, plate XV 2 grave 49, Mertens, J. & Van Impe, L. 1971  
 Regensburg, grave 1031 1, Von Schnurbein, S. 1977  
 St. Marcel, Paris, AM 755/2, Musée Carnavalet, 1985  
 Strasbourg, no.inv.no, Musée des Antiquités et d'Archéologie, Strasbourg  
 Tongeren, afb. 1, Vanvinckenroye, W. 1995  
 Trier, doubtful provenance, inv. 21510(156d), Cüppers, H.et al, 1984  
 Windisch, Taf. 31 471, Meyer-Freuler, C. 1989  
 Zurich, grave 16 Taf. 8, Escher, K. 1930



Zurzach, grave 154, Roth-Rubi, K. & Sennhauser, H. 1987

### **Crossbow brooches of type 2ii**

Aisne, 2. 523, Musée de Laon

Altenstadt, Taf. 35 1, Keller, E. 1971

St. Andra am Zicksee, VB Neusiedl, Abb. 778, Adler, H.ed. 1990

Apetlon, VB Neusiedl-am-see, Abb. 533, Adler, H.ed. 1989

Augst, Taf. 51 1455, Riha, E. 1979

Augst, Taf. 52 1460, Riha, E. 1979

Augst, Taf. 52 1461, Riha, E. 1979

Augst, Taf. 55 1487, Riha, E. 1979

Augsburg, Taf. 6 8, Keller, E. 1971

Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 514, Adler, H.ed. 1988

Beauvais, 26298, MAN St. Ger.

Bregenz, Taf. 10 168, Overbeck, B. 1982

Bregenz, grave 364, Von Schwerzenbach, K. 1909

Bruck an der Leitha, Abb. 940, Adler, H.ed. 1990

Brunn am Gebirge, grave 15 3, Farka, C. 1976

Budapest (Aquincum), grave 10 (vii), Tópal, J. 1993

Budapest (Aquincum), grave 113, Tópal, J. 1993

Caister-by-Yarmouth, fig. 41 11, Darling, M. & Gurney, D. 1993

Chalon, 107, Feugère, M. 1977

Chartres, sép. 739 C77. 7179. 1, Maison d'Archéologie, Chartres

Deurne, N.Brabant, NL, Taf. 22 5, Klumbach, H. 1973

Dunapentele, grave 1300, Bóna, I. & Vágo, E. 1976

Froitzheim, Kr.Duren, Abb. 34 27, Barfield, L. 1968

Göggingen, Taf. 8 7, Keller, E. 1971

Grünwald, Taf. 29 4, Keller, E. 1971

Gunzburg, Taf. 11 10, Keller, E. 1971

Hungary (arbitrary point) doubtful provenance, 21424, RGZM

Ijzendoorn bij Ochten NL, fig. 47, Lunsingh-Schleurleer, 1987

Irrsdorf, Salzburg, fig. 16 1, Hell, M. 1943b

Keszthely-Dobogó, grave 46, Sagi, K. 1981

Keszthely-Dobogó, grave 84, Sagi, K. 1981

Königsbrunn, Taf. 17 2, Keller, E. 1971

Lampertheim am Rhein, Abb. 12, Behn, F. 1935

Lampertheim am Rhein, Taf. 47 Abb. 2, Koch, A. 1937

Lauriacum (Enns), 246, Jobst, W. 1975

Lauriacum (Enns), 255, Jobst, W. 1975

Liberchies, fig. 26 2, Brulet, R. 1995

London, 451(57-59/1), Museum of London

London, 458(57-59/2), Museum of London



Lyon prov. locale, 537, Boucher, S. Perdu, G. & Feugère. 1980  
 Lyon prov. locale, 538, Boucher, S. Perdu, G. & Feugère. 1980  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 7, Lindenschmidt, L. 1881  
 Mainz, 79/163, Landesmuseum Mainz  
 Mainz, 29633, RGZM, illustrations in inventory book  
 Mainz, no inv. no. MAN St. Ger.  
 Mont-Bérny (Oise) Fôret de Compiègne, 28928, MAN St. Ger.  
 Moosberg bei Murnau, Taf. 25 4, Garbsch, J. 1966  
 Neuburg an der Donau, grave 92, Keller, E. 1979  
 Nijmegen, 715, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Oudenburg, plate LI 7 grave 165, Mertens, J. & Van Impe, L. 1971  
 Pähl, Taf. 45 1, Keller, E. 1971  
 Paris, 60805, MAN St. Ger.  
 Paris, 71850(2), MAN St. Ger.  
 Pécs, grave R151-63 3, Fülep, F. 1977  
 Pécs, grave R151-63 4, Fülep, F. 1977  
 Pécs, grave R168 3, Fülep, F. 1977  
 Pécs, grave R168 4, Fülep, F. 1977  
 Pécs, grave R92-105, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 943, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 21 L, Miltner, F. 1933  
 Regensburg, Taf. 180 12, Von Schnurbein, S. 1977  
 Sagvar, grave 63 1, Burger, A. 1966  
 Schwaben, Taf. 8 3, Keller, E. 1971  
 Somogyzsil, grave 98 3, Burger, A. 1979  
 St. Polten, 23, Scherrer, P. 1991  
 Strasbourg, Ae756, Musée des Antiquités et d'Archéologie, Strasbourg  
 Straubing, p. 49 L, Prammer, J. 1985  
 Tongeren, Loe 10189(a), Musées Royaux d'Art et d'Histoire, Bruxelles  
 Trier, inv.01, 32, Rheinisches Landesmuseum Trier  
 Trier, inv.G. 1366, Rheinisches Landesmuseum Trier  
 Trier, RD. 73. 8 L bottom, RLT photos  
 Unterpetersdorf, VB Oberpullendorf, Abb. 567, Lackner, A. 1994  
 Winden-am-See, VB Neusiedl am See, Abb. 523, Adler, H.ed. 1981

#### **Crossbow brooches probably type 2ii**

Azlburg, Straubing, Taf. 7 top L, Menghin, W. 1990  
 Elton, Lincs. 73. 6. 2. 49, British Museum  
 Hungary (arbitrary point) doubtful provenance, 21416, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21423, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21430, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21444, RGZM



Poltross Burn, Hadrians Wall, fig. 20 5, Gibson, J. & Simpson, S. 1911  
Trier, inv. 17, 518, Rheinisches Landesmuseum Trier  
Velzeke, no. inv. Velzeke Museum  
Ziegetsdorf (umland Regensburg), Taf. 223 2, Fischer, T. 1990

### **Crossbow brooches of type 2iii**

Aisne, (arbitrary point) 0. 221, Musée de Laon  
Amiens, fig.IX 62, Dilly, G. 1978  
Augst, Taf. 51 1450, Riha, E. 1979  
Augst, Taf. 51 1454, Riha, E. 1979  
Augst, Taf. 51 1457, Riha, E. 1979  
Augst, Taf. 38 2737, Riha, E. 1994  
Chartres, sép. 745 C77. 7267. 1, Maison d'Archéologie, Chartres  
Dalheim, 1900-1/92, Musée d'Histoire et d'Art, Luxembourg  
Krefeld-Gellep, grave 1236, Pirling, R. 1966  
Krefeld-Gellep, grave 720, Pirling, R. 1966  
Krefeld-Gellep, Taf. 54 556, Pirling, R. 1966  
Krefeld-Gellep, grave 2711, Pirling, R. 1979  
Krefeld-Gellep, Taf. 85 1, Pirling, R. 1989  
Krefeld-Gellep, Taf. 90 3, Pirling, R. 1989  
Lankhills, Winchester, SF 13 grave 13, Clarke, G. 1976  
Lankhills, Winchester, SF 24 grave 23, Clarke, G. 1976  
Lauriacum (Enns), 227, Jobst, W. 1975  
Lauriacum (Enns), XLVI 1, Kloiber, A. 1962  
London, 84. 451, Museum of London  
London, 85. 108/2, Museum of London  
Longues Raies, de Soissons, plate 8 3, Boulanger, C. 1902  
Mijnsherenland, From Binnen-Maas, fig. 4-7, Burgers, J. 1968  
Moosberg bei Murnau, Taf. 25 5, Garbsch, J. 1966  
Nijmegen, 727, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
Nijmegen, E.IV. 42, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
Nijmegen, G.N.B.E.IV 257, GM Kam Museum, Nijmegen  
Nijmegen, fig. 9, Burgers, J. 1968  
Nijmegen, 57 XI, Van Buchems card index, GM Kam Museum, Nijmegen  
Odiham, Hants, fig. 10 28, Brailsford, J. 1951  
Oudenburg, plate XII 6 grave 41, Mertens, J. & Van Impe, L. 1971  
Oudenburg, plate XIII 1 grave 37, Mertens, J. & Van Impe, L. 1971  
Regensburg, grave 611 5, Von Schnurbein, S. 1977  
Richborough, 80, Cunliffe, B. 1968  
Simbach, Ldkr Pfarrkirchen, Taf. 47 10, Keller, E. 1971  
South Shields, fig. 7. 13, Bidwell, P. & Speak, S. 1994  
South Shields, fig. 7. 14, Bidwell, P. & Speak, S. 1994



Trier, doubtful provenance, inv. 5366(156a), Cüppers, H. et al, 1984

Vieux-Port, Eure, 562, Dollfus, M. 1973

**Crossbow brooches hybrid of types 2 and 3/4 (included in analyses as type 2 )**

Augst, Taf. 52 1462, Riha, E. 1979

Budapest (Aquincum), grave 1/4 pl. 171, Tópal, J. 1993

Budapest (Aquincum), grave 138 5, Tópal, J. 1993

Keszthely-Dobogó, grave 96, Sagi, K. 1981

Lauriacum (Enns), 267, Jobst, W. 1975

Niederemmel, 56, Böhme, H. 1980

**Type 2 crossbow brooches with three cone shaped knobs**

Augst, Taf. 51 1450, Riha, E. 1979

Augst, Taf. 51 1457, Riha, E. 1979

Augst, Taf. 38 2737, Riha, E. 1994

Chalon, 108, Feugère, M. 1977

Chartres, sép. 745 C77. 7267. 1, Maison d'Archéologie, Chartres

Krefeld-Gellep, grave 1117, Pirling, R. 1966

Krefeld-Gellep, grave 720, Pirling, R. 1966

Krefeld-Gellep, Taf. 54 556, Pirling, R. 1966

Longues Raies, de Soissons, plate 8 3, Boulanger, C. 1902

Nijmegen, 715, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Nijmegen, 727, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Oudenburg, plate XII 6 grave 41, Mertens, J. & Van Impe, L. 1971

Oudenburg, plate XV 2 grave 49, Mertens, J. & Van Impe, L. 1971

Regensburg, grave 1031 1, Von Schnurbein, S. 1977

South Shields, fig. 7. 13, Bidwell, P. & Speak, S. 1994

South Shields, fig. 7. 14, Bidwell, P. & Speak, S. 1994

South Shields, 3. 5, Allason-Jones, L. & Milet, R. 1984

Tongeren,afb. 1, Vanvinckenroye, W. 1995

Vienne, p. 128 221, Boucher, S. 1971

**Type 2 crossbow brooches with 3 faceted knobs (excluding type facet 7)**

Aisne, (arbitrary point) 0. 221, Musée de Laon

Apetlon, VB Neusiedl-am-see, Abb. 533, Adler, H. ed. 1989

Augst, Taf. 51 1455, Riha, E. 1979

Augst, Taf. 52 1460, Riha, E. 1979

Augsburg, Taf. 6 8, Keller, E. 1971

Azlburg, Straubing, Taf. 7 top L, Menghin, W. 1990

Bad Deutsch-Altenburg, Bruck-an-der-Leitha, Abb. 514, Adler, H. ed. 1988

Budapest (Aquincum), grave 10 (vii), Tópal, J. 1993

Caister-by-Yarmouth, fig. 41 11, Darling, M. & Gurney, D. 1993



Deurne, N.Brabant, Taf. 22 5, Klumbach, H. 1973  
 Elton, Lincs. 73. 6. 2. 49, British Museum  
 Gunzburg, Taf. 11 10, Keller, E. 1971  
 Hungary (arbitrary point) doubtful provenance, 21430, RGZM  
 Hungary arbitrary point , Doubtful provenance, 21444, RGZM  
 Irrsdorf, Salzburg, fig. 16 1, Hell, M. 1943b  
 Keszthely-Dobogó, grave 84, Sagi, K. 1981  
 Keszthely-Dobogó, grave 96, Sagi, K. 1981  
 Krefeld-Gellep, Taf. 114 9, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 85 1, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 90 3, Pirling, R. 1989  
 Lampertheim am Rhein, Abb. 12, Behn, F. 1935  
 Lauriacum (Enns), 246, Jobst, W. 1975  
 Lauriacum (Enns), 267, Jobst, W. 1975  
 Mainz, 79/163, Landesmuseum Mainz  
 Area of Mainz(arbitrary point) doubtful provenance, Taf. 4 7, Lindenschmidt, L. 1881  
 Mont-Bérny (Oise) Fôret de Compiègne, 28928, MAN St. Ger.  
 Moosberg bei Murnau, Taf. 25 4, Garbsch, J. 1966  
 Nijmegen, E.IV. 42, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 57 XI, Van Buchems card index, GM Kam Museum, Nijmegen  
 Oudenburg, plate XIII 1 grave 34, Mertens, J. & Van Impe, L. 1971  
 Pähl, Taf. 45 1, Keller, E. 1971  
 Pécs, grave R151-63 3, Fülep, F. 1977  
 Pécs, grave R151-63 4, Fülep, F. 1977  
 Pécs, grave R168 3, Fülep, F. 1977  
 Regensburg, Taf. 180 12, Von Schnurbein, S. 1977  
 Schwaben, Taf. 8 3, Keller, E. 1971  
 Somogyzsil, grave 98 3, Burger, A. 1979  
 St. Polten, 23, Scherrer, P. 1991  
 Tournai, f73 128, Cabuy, Y. 1992  
 Tongeren, Loe 10189(a), Musées Royaux d'Art et d'Histoire, Bruxelles  
 Trier, inv.01, 32, Rheinisches Landesmuseum Trier  
 Trier, inv. 17, 518, Rheinisches Landesmuseum Trier  
 Unterpetersdorf, VB Oberpullendorf, Abb. 567, Lackner, A. 1994  
 Winden-am-See, VB Neusiedl am See, Abb. 523, Adler, H.ed. 1981

### **Type 2 crossbow brooches with facet7 shaped knobs**

Aisne (arbitrary point) 2. 523, Musée de Laon  
 Beauvais, 26298, MAN St. Ger.  
 Dalheim, 1900-1/92, Musée d'Histoire et d'Art, Luxembourg  
 Krefeld-Gellep, grave 1236, Pirling, R. 1966  
 Mijnsheerenland, From Binnen-Maas, fig. 4-7, Burgers, J. 1968



Nijmegen, G.N.B.E.IV 257, GM Kam Museum, Nijmegen

Nijmegen, fig. 9, Burgers, J. 1968

Trier, doubtful provenance, inv. 5366(156a), Cüppers, H.et al, 1984

### **Crossbow brooches with pronounced cuff at base of bow (mostly type 2iii)**

Aisne, (arbitrary point) O. 221, Musée de Laon

Altenstadt, Taf. 35 1, Keller, E. 1971

Augst, Taf. 38 2737, Riha, E. 1994

Bregenz, Abb. 3, Pröttel, P. 1988

Erickstanebrae, Moffat, Dumfriesshire, afb. 7, Van Buchem, H 1973b

Meuse nr. Katwÿk , R.K.U. 11, Van Buchems card index, GM Kam Museum, Nijmegen

Krefeld-Gellep, grave 1236, Pirling, R. 1966

Krefeld-Gellep, Taf. 85 1, Pirling, R. 1989

Krefeld-Gellep, Taf. 90 3, Pirling, R. 1989

Longues Raies, de Soissons, plate 8 3, Boulanger, C. 1902

Nijmegen, 715, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Odiham, Hants, fig. 10 28, Brailsford, J. 1951

Oudenburg, plate XIII 1 grave 34, Mertens, J. & Van Impe, L. 1971

Simbach, Ldkr Pfarrkirchen, Taf. 47 10, Keller, E. 1971

Tongeren, plate 65 99, Vanvinckenroye, W. 1984

Trier, doubtful provenance, inv. 5366(156a), Cüppers, H.et al, 1984

### **Crossbow brooches with bow base type 9**

Aisne, (arbitrary point) O. 221, Musée de Laon

Katwÿk, from Meuse nr. R.K.U. 11, Van Buchems card index, GM Kam Museum, Nijmegen

Krefeld-Gellep, grave 1236, Pirling, R. 1966

Longues Raies, de Soissons, plate 8 3, Boulanger, C. 1902

Nijmegen, 715, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Simbach, Ldkr Pfarrkirchen, Taf. 47 10, Keller, E. 1971

Trier, doubtful provenance, inv. 5366(156a), Cüppers, H.et al, 1984

### **Crossbow brooches of type 2 with a10 foot decoration**

Altenstadt, Taf. 35 1, Keller, E. 1971

Augst, Taf. 51 1455, Riha, E. 1979

Augst, Taf. 52 1461, Riha, E. 1979

Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 514, Adler, H.ed. 1988

Beauvais, 26298, MAN St. Ger.

Bruck an der Leitha, Abb. 940, Adler, H.ed. 1990

Budapest (Aquincum), grave 113, Tópal, J. 1993

Budapest (Aquincum), grave 138 5, Tópal, J. 1993

Chartres, sép. 739 C77. 7179. 1, Maison d'Archéologie, Chartres

Göggingen, Taf. 8 7, Keller, E. 1971



Gunzburg, Taf. 11 10, Keller, E. 1971  
 Ijzendoorn bij Ochten NL, fig. 47, Lunsingh-Schleurleer, 1987  
 Irrsdorf, Salzburg, fig. 16 1, Hell, M. 1943b  
 Lyon prov. locale, 537, Boucher, S. Perdu, G. & Feugère, 1980  
 Moosberg bei Murnau, Taf. 25 4, Garbsch, J. 1966  
 Niederemmel, Kr.Bernkas-W. 56, Böhme, H. 1980  
 Nijmegen, 57 XI, Van Buchems card index, GM Kam Museum, Nijmegen  
 Oudenburg, plate LI 7 grave 165, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R151-63 3, Fülep, F. 1977  
 Pécs, grave R151-63 4, Fülep, F. 1977  
 Pécs, grave R168 4, Fülep, F. 1977  
 Somogyzsil, grave 98 3, Burger, A. 1979  
 Tournai, f73 128, Cabuy, Y. 1992  
 Tongeren, Loe 10189(a), Musées Royaux d'Art et d'Histoire, Bruxelles  
 Winden-am-See, VB Neusiedl am See, Abb. 523, Adler, H.ed. 1981

#### **Type 2 crossbow brooches with b17 foot decoration**

Augst, Taf. 52 1460, Riha, E. 1979  
 Brunn am Gebirge, grave 15 3, Farka, C. 1976  
 Deurne, N.Brabant, NL, Taf. 22 5, Klumbach, H. 1973  
 Dunapentele, grave 1300, Bóna, I. & Vágo, E. 1976  
 Hungary (arbitrary point) doubtful provenance, 21416, RGZM  
 Lauriacum (Enns), 246, Jobst, W. 1975  
 London, 451(57-59/1), Museum of London  
 Neuburg an der Donau, grave 92, Keller, E. 1979  
 Nijmegen, 719, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Vieux-Port, Eure, 562, Dollfus, M. 1973

#### **Type 2 crossbow brooches with c5 foot**

Apetlon, VB Neusiedl-am-see, Abb.667, Adler, H.ed. 1982  
 Bregenz, Taf. 10 168, Overbeck, B. 1982  
 Area of Mainz (arbitrary point) doubtful provenance, Taf.4 7, Lindenschmidt, L. 1881  
 Mainz, 29633, RGZM illustrated in inventory book  
 Pähl, Taf.45 1, Keller, E. 1971  
 Pécs, grave R168 3, Fülep, F. 1977  
 Sagvar, grave 63 1, Burger, A. 1966  
 St,Marcel, Paris, AM 755/2, Musée Carnavalet 1985  
 St. Polten, 23, Scherrer, P. 1991  
 Straubing, p.49 L, Prammer, J. 1985  
 Trier, inv.01,32, Rheinisches Landesmuseum Trier  
 Zurzach, grave 154, Roth-Rubi, K. & Sennhauser, H. 1987



## **Type 2 crossbow brooches with a2/d1 bow decoration**

Aisne, (arbitrary point) 2. 523, Musée de Laon  
Beauvais, 26298, MAN St. Ger.  
Brunn-am-Gebirge, grave 15 3, Farka, C. 1976  
Budapest(Aquincum), grave 113, Tópal, J. 1993  
Budapest(Aquincum), grave 138 5, Tópal, J. 1993  
Caister-by-Yarmouth, fig. 41 11, Darling, M. & Gurney, D. 1993  
Deurne, N.Brabant, NL, Taf. 22 5, Klumbach, H. 1973  
Grünwald, Taf. 29 4, Keller, E. 1971  
Hungary (arbitrary point) doubtful provenance, 21416, RGZM  
Hungary (arbitrary point) doubtful provenance, 21424, RGZM  
Irrsdorf, Salzburg, fig. 16 1, Hell, M. 1943b  
Lauriacum (Enns), 246, Jobst, W. 1975  
London, 84. 451, Museum of London  
Pécs, grave R151-63 3, Fülep, F. 1977  
Pécs, grave R151-63 4, Fülep, F. 1977  
Pécs, grave R168 3, Fülep, F. 1977  
Schwaben, Taf. 8 3, Keller, E. 1971  
Strasbourg, Ae756, Musée des Antiquités et d'Archéologie, Strasbourg  
Trier, inv.01, 32, Rheinisches Landesmuseum Trier  
Trier, inv. 17, 518, Rheinisches Landesmuseum Trier  
Unterpetersdorf, VB Oberpullendorf, Abb. 567, Lackner, A. 1994

## **Crossbow brooches of type 3/4**

Abbeville, label 'Abbeville' no further inv, MAN St. Ger.  
Aisne (arbitrary point) 0. 229, Musée de Laon  
Aisne (arbitrary point), 0. 2771, Musée de Laon  
Aisne (arbitrary point), 54. 4(22545), Musée de Laon  
St. Albans, fig. 44 33, Wheeler, R. & Wheeler, T. 1936  
Altbachtal, nr. Trier, S.T. 11545, Rheinisches Landesmuseum Trier  
Altbachtal, nr. Trier, S.T. 12110, Rheinisches Landesmuseum Trier  
Altenstadt, Taf. 33 9, Keller, E. 1971  
Altenstadt, Taf. 35 2, Keller, E. 1971  
Amay, région Liège, I/0823, Musée Curtius, Liège  
Antau, (Hirm-Antau) VB Mattersburg, Abb. 675, Adler, H.ed. 1990  
Apetlon, VB Neusiedl-am-see, Abb. 534, Adler, H.ed. 1989  
Apetlon, VB Neusiedl-am-see, Abb. 535, Adler, H.ed. 1989  
Apetlon, VB Neusiedl-am-see, Abb. 666, Adler, H.ed. 1982  
Augst, Taf. 52 1458, Riha, E. 1979  
Augst, Taf. 52 1459, Riha, E. 1979  
Augst, Taf. 52 1463, Riha, E. 1979



Augst, Taf. 53 1464, Riha, E. 1979  
 Augst, Taf. 53 1465, Riha, E. 1979  
 Augst, Taf. 53 1467, Riha, E. 1979  
 Augst, Taf. 53 1468, Riha, E. 1979  
 Augst, Taf. 53 1469, Riha, E. 1979  
 Augst, Taf. 53 1470, Riha, E. 1979  
 Augst, Taf. 54 1471, Riha, E. 1979  
 Augst, Taf. 54 1472, Riha, E. 1979  
 Augst, Taf. 54 1473, Riha, E. 1979  
 Augst, Taf. 54 1474, Riha, E. 1979  
 Augst, Taf. 54 1476, Riha, E. 1979  
 Augst, Taf. 54 1477, Riha, E. 1979  
 Augst, Taf. 54 1478, Riha, E. 1979  
 Augst, Taf. 54 1479, Riha, E. 1979  
 Augst, Taf. 54 1480, Riha, E. 1979  
 Augst, Taf. 55 1481, Riha, E. 1979  
 Augst, Taf. 55 1482, Riha, E. 1979  
 Augst, Taf. 55 1483, Riha, E. 1979  
 Augst, Taf. 55 1486, Riha, E. 1979  
 Augst, Taf. 56 1490, Riha, E. 1979  
 Augst, Taf. 37. 2730, Riha, E. 1994  
 Augst, Taf. 37 2731, Riha, E. 1994  
 Augst, Taf. 37 2732, Riha, E. 1994  
 Augst, Taf. 37 2733, Riha, E. 1994  
 Augst, Taf. 37 2734, Riha, E. 1994  
 Augst, Taf. 37 2735, Riha, E. 1994  
 Augst, Taf. 38 2736, Riha, E. 1994  
 Augst, Taf. 38 2738, Riha, E. 1994  
 Augst, Taf. 38 2747, Riha, E. 1994  
 Augst, Taf. 38 2748, Riha, E. 1994  
 Augsburg, Taf. 6 4, Keller, E. 1971  
 Augsburg, Taf. 6 9, Keller, E. 1971  
 Augsburg, Taf. 7 5, Keller, E. 1971  
 Augsburg, Taf. 7 6, Keller, E. 1971  
 Augsburg, Taf. 7 8, Keller, E. 1971  
 Augsburg, Taf. 7 9, Keller, E. 1971  
 Augsburg, Taf. 8 1, Keller, E. 1971  
 Avenches, fig. 78, Bogli, H. 1984  
 Azlburg, Straubing, Abb. 117, Prammer, J. 1989  
 Azlburg, Straubing, Taf. 7 top R, Menghin, W. 1990  
 Azlburg, Straubing, Taf. 7 bottom L, Menghin, W. 1990  
 Azlburg, Straubing, grave 5b 2, Prammer, J. 1985a



Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 748, Adler, H.ed. 1989  
 Balzers, Gutenberg, Liechtenstein, Taf. 36 6, Overbeck, B. 1982  
 Bardouville, Aisne, p. 276, De Bouard, M. 1970  
 Basel, Abb. 43, Laur-Belart, R. 1959  
 Basel, grave 312, Degen, R. 1957  
 Basel, grave 317, Degen, R. 1957  
 Beaulieu, par Bardouville, 568, Dollfus, M. 1973  
 Berg, Taf. 20 8, Keller, E. 1971  
 Bernhardsthal, VB Mistelbach, Abb. 874, Adler, H.ed. 1989  
 Besançon, plate XIX 323, Lerat, L. 1956  
 Bitburg (nr Trier), Abb. 16 (1), Frey, M.Gilles, K & Thiel, M. 1995  
 Bitburg (nr Trier), Abb. 16 (2), Frey, M.Gilles, K & Thiel, M. 1995  
 Bitburg (nr Trier), Abb. 16 (3), Frey, M.Gilles, K & Thiel, M. 1995  
 Bruckneudorf, VB Neusiedl am See, Abb. 260, Adler, H.ed. 1977  
 Bregenz, Taf. 10 163, Overbeck, B. 1982  
 Bregenz, Taf. 10 164, Overbeck, B. 1982  
 Bregenz, Taf. 10 165, Overbeck, B. 1982  
 Bregenz, SG588, Jacobs, J. & Von Schwerzenbach, K. 1910  
 Bregenz, SG613, Jacobs, J. & Von Schwerzenbach, K. 1910  
 Bregenz, grave 380, Von Schwerzenbach, K. 1909  
 Breitenbrunn, VB Eisenstadt, Abb. 411, Adler, H.ed 1985/6  
 Saint-Brieuc, fig. 1 3, Galliou, P. 1974  
 Brigham, West Cumberland, plate II 8a, Haverfield, F. 1919  
 Bruckneudorf, VB Neusiedl-am-See, Abb. 415, Adler, H.ed. 1985/6  
 Brumath, Grafenburg, Alsace, fig. 26 A, Pétry, F. 1972  
 Brunehaut-Liberchies, fig. 37 12, Mertens, J. & Brulet, R. 1974  
 Buchendorf, Taf. 36 11, Keller, E. 1971  
 Buda-Keszi, afb. 15, Van Buchem, H. 1973  
 Budapest (Aquincum), grave 11 (vii), Tópal, J. 1993  
 Budapest (Aquincum), grave 88, Tópal, J. 1993  
 Budapest (Aquincum), grave 92/1, Tópal, J. 1993  
 Burgheim, Taf. 16 1, Keller, E. 1971  
 Bürgli (unteres), nr.Schwaderloch, Switz, p. 26, Drack, W. 1980  
 Bürgli (unteres), nr.Schwaderloch, Switz, p. 26 L, Drack, W. 1980  
 Caerwent, Acc.No.D254, Newport Museum & Art Gallery  
 Caerwent, Acc.No.D255(?), Newport Museum & Art Gallery  
 Caister-by-Yarmouth, fig. 41 10, Darling, M. & Gurney, D. 1993  
 Caister-by-Yarmouth, fig. 41 9, Darling, M. & Gurney, D. 1993  
 Chalon, 110, Feugère, M. 1977  
 Chalon, 112, Feugère, M. 1977  
 Chameleux (Florenville), fig. 10, Doyen, M. 1987  
 Champlieu, 14333(2), MAN St. Ger.



Champlieu, 28946, MAN St. Ger.  
 Charnay, 109, Feugère, M. 1977  
 Charnay, 111, Feugère, M. 1977  
 Chartres, 1880. 4229. 1, Musée des Beaux-Arts, Chartres  
 Chartres, sép. 743 C77. 7215. 1, Maison d'Archéologie, Chartres  
 Chartres, sép. 743 C77. 7405 1, Maison d'Archéologie, Chartres  
 Chartres, sép. 766 C77. 7384. 1, Maison d'Archéologie, Chartres  
 Chartres, plate IV 23, Joly, D. et al, 1988  
 Colchester, fig. 10 30, Brailsford, J. 1951  
 Colchester, 70. 4. 2. 46, British Museum  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger. (no individual find numbers for this find and those below)  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
 Corbridge, fig. 10 84, Snape, M. 1993  
 Corbridge, fig. 11 86, Snape, M. 1993  
 Coventinas Well, 48, Allason-Jones, L. & McKay, B. 1985  
 Dalheim, 1900-1/568, Musée d'Histoire et d'Art, Luxembourg  
 Dalheim, 1980-100/369, Musée d'Histoire et d'Art, Luxembourg  
 Dalheim, 3-578, Musée d'Histoire et d'Art, Luxembourg  
 Dalheim, 14072, RGZM  
 Dalheim, 14073, RGZM  
 St. Donat, VB St. Veit an der Glan, Abb. 391, Adler, H. ed, 1984  
 Douvrend, nr Dieppe, 553, Dollfus, M. 1973  
 Dudelange Mont-St. Jean, c116, Musée d'Histoire et d'Art, Luxembourg  
 Dunapentele, XXXVI, Kovrig, I. 1937  
 Dunapentele, 16470, Landesmuseum Mainz  
 Dunapentele, 291, Landesmuseum Mainz  
 Dunapentele, 16469, RGZM  
 Dunapentele, grave 1033, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 104, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1042, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1047, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1056, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1066, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1070, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 11, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1141, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1188, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 150, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 33, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 49, Bóna, I. & Vágo, E. 1976



Dunapentele, grave 56, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 944, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 947, Bóna, I. & Vágo, E. 1976  
 East Anglia (arbitrary point), 1266, Hattatt, R. 1987  
 Ecooust-Saint-Mein, fig. 42. 10, Delmaire, R. & Notte, L. 1988  
 Edelstal, VB Neusiedl am See, Abb. 341, Adler, H.ed, 1988  
 Edelstal, VB Neusiedl am See, Abb. 342, Adler, H.ed, 1988  
 Edelstal, VB Neusiedl am See, Abb. 343, Adler, H.ed, 1988  
 Evreux, 485, Fauduet, I. 1992  
 Evreux, 558, Dollfus, M. 1973  
 Evreux, 559, Dollfus, M. 1973  
 Evreux, 560, Dollfus, M. 1973  
 Föching, Taf. 21 1, Keller, E. 1971  
 St. Martin-de-Fontenay, Calvados, plate 37, Pilet, C. 1994  
 Furfooz, fig. 16 F1, Nenquin, J. 1953  
 Fussach, Bez.Bregenz, Taf. 31 4, Overbeck, B. 1982  
 Gattendorf, VB Neusiedl am See, Abb. 449, Adler, H.ed. 1985/6  
 Gattendorf, VB Neusiedl am See, Abb. 535, Adler, H.ed. 1994  
 Gauting, Taf. 36 12, Keller, E. 1971  
 Geer, fig.121, Van der Roest, J. 1994  
 Gellep, text Abb. 5 3, Behrens, G. 1919  
 Girm, VB Oberpullendorf, Abb. 696, Adler, H.ed. 1990  
 Girm, VB Oberpullendorf, Abb. 227, Adler, H.ed. 1976  
 Kobern-Gondorf, Taf. 18 17, Schulze-Dörlamm, M. 1990  
 Grossprüfening (Umland Regensburg), Taf. 25 F1, Fischer, T. 1990  
 Grünwald, Taf. 29 6, Keller, E. 1971  
 Guillacourt, 492, Legros, V. unpublished  
 Bürgele bei Gundremmingen, Taf. 7 4, Bersu, G. 1964  
 Gunzburg, Taf. 12 4, Keller, E. 1971  
 Gunzburg, Taf. 12 5, Keller, E. 1971  
 Herstal, Liège, 4/15, Musée Curtius, Liège  
 Hundsheim, VB Bruck an der Leitha, Abb. 1026, Adler, H.ed. 1989  
 Hungary (arbitrary point) doubtful provenance, 21397, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21399, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21403, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21406, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21413, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21418, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21419, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21421, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21422, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21426, RGZM



Hungary (arbitrary point) doubtful provenance, 21427, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21428, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21429, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21436, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21437, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21438, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21439, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21440, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21445, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21447, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21448, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21602, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21603, RGZM  
 Ickham, fig. 4 1, Young, C. 1981  
 Irgenhausen nr Pfäffikon, Schweiz, Abb. 22, Meyer, E. 1969  
 Jois, VB Neusiedl am See, Abb. 367, Adler, H.ed. 1988  
 Katwijk, from Meuse nr. R.K.U. 11, Van Buchems card index, GM Kam Museum, Nijmegen  
 Kellmünz, Abb. 52 3, Mackensen, M. 1995  
 Kempten (Cambodunum), Taf. 23 315, Schleiermacher, M. 1993  
 Keszthely-Dobogó, grave 113, Sagi, K. 1981  
 Keszthely-Dobogó, grave 34, Sagi, K. 1981  
 Keszthely-Dobogó, grave 4, Sagi, K. 1981  
 Keszthely-Dobogó, grave 44, Sagi, K. 1981  
 Keszthely-Dobogó, grave 48, Sagi, K. 1981  
 Keszthely-Dobogó, grave 52, Sagi, K. 1981  
 Keszthely-Dobogó, grave 55, Sagi, K. 1981  
 Keszthely-Dobogó, grave 61, Sagi, K. 1981  
 Keszthely-Dobogó, grave 65, Sagi, K. 1981  
 Keszthely-Dobogó, grave 75, Sagi, K. 1981  
 Keszthely-Dobogó, grave 79, Sagi, K. 1981  
 Keszthely-Dobogó, grave 8, Sagi, K. 1981  
 Kirchheim bei München, grave 7 Abb. 5 8, Keller, E. 1989  
 Kirchlibuck, Switz. p. 31 M, Drack, W. 1980  
 Kleinaitingen, Taf. 13 11, Keller, E. 1971  
 KlosterNeuburg, grave 10 Taf. 12 2, Neugebauer, J. & Neugebauer, C. 1986  
 Köln, Taf. 77 grave 107, Friedhoff, U. 1991  
 Köln, Taf. 1, Behrens, G. 1919  
 Köln, 28, 567, Römisch-Germanisches Museum, Köln  
 Köln, 53, 463, Römisch-Germanisches Museum, Köln  
 Köln, N3472, Römisch-Germanisches Museum, Köln  
 Köln, afb. 7, Van Buchem, H. 1970  
 Königsbrunn, Taf. 17 1, Keller, E. 1971



Krefeld-Gellep, grave 1041, Pirling, R. 1966  
 Krefeld-Gellep, grave 1124, Pirling, R. 1966  
 Krefeld-Gellep, grave 1216, Pirling, R. 1966  
 Krefeld-Gellep, grave 1493, Pirling, R. 1974  
 Krefeld-Gellep, grave 1567, Pirling, R. 1974  
 Krefeld-Gellep, grave 2646, Pirling, R. 1979  
 Krefeld-Gellep, grave 2657, Pirling, R. 1979  
 Krefeld-Gellep, grave 2793, Pirling, R. 1979  
 Krefeld-Gellep, grave 2832, Pirling, R. 1979  
 Krefeld-Gellep, grave 2845, Pirling, R. 1979  
 Krefeld-Gellep, grave 2872, Pirling, R. 1979  
 Krefeld-Gellep, grave 2881, Pirling, R. 1979  
 Krefeld-Gellep, grave 2885, Pirling, R. 1979  
 Krefeld-Gellep, grave 2895, Pirling, R. 1979  
 Krefeld-Gellep, grave 2896, Pirling, R. 1979  
 Krefeld-Gellep, Taf. 12 12 grave 2996, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 12 9 grave 2992, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 15 11 grave 3025, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 16 1 grave 3027, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 16 5 grave 3028, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 22 3 grave 3043, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 28 5 grave 3093, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 3 10 grave 2911, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 5 2 grave 2907, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 7 13 grave 2938, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 8 15 grave 2942, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 9 14 grave 2971, Pirling, R. 1989  
 Lankhills, Winchester, SF 74 grave 81, Clarke, G. 1976  
 Lauriacum (Enns), Abb. 791, Adler, H. 1983  
 Lauriacum (Enns), Abb. 806, Adler, H. 1983  
 Lauriacum (Enns), Abb. 813, Adler, H. 1983  
 Lauriacum (Enns), 245, Jobst, W. 1975  
 Lauriacum (Enns), 248, Jobst, W. 1975  
 Lauriacum (Enns), 249, Jobst, W. 1975  
 Lauriacum (Enns), 250, Jobst, W. 1975  
 Lauriacum (Enns), 252, Jobst, W. 1975  
 Lauriacum (Enns), 256, Jobst, W. 1975  
 Lauriacum (Enns), 257, Jobst, W. 1975  
 Lauriacum (Enns), 258, Jobst, W. 1975  
 Lauriacum (Enns), 259, Jobst, W. 1975  
 Lauriacum (Enns), 260, Jobst, W. 1975  
 Lauriacum (Enns), 261, Jobst, W. 1975



Lauriacum (Enns), 262, Jobst, W. 1975  
 Lauriacum (Enns), 264, Jobst, W. 1975  
 Lauriacum (Enns), 265, Jobst, W. 1975  
 Lauriacum (Enns), 266, Jobst, W. 1975  
 Lauriacum (Enns), 268, Jobst, W. 1975  
 Lauriacum (Enns), 270, Jobst, W. 1975  
 Lauriacum (Enns), 271, Jobst, W. 1975  
 Lauriacum (Enns), 272, Jobst, W. 1975  
 Lauriacum (Enns), 273, Jobst, W. 1975  
 Lauriacum (Enns), 274, Jobst, W. 1975  
 Lauriacum (Enns), 275, Jobst, W. 1975  
 Lauriacum (Enns), 276, Jobst, W. 1975  
 Lauriacum (Enns), 277, Jobst, W. 1975  
 Lauriacum (Enns), 278, Jobst, W. 1975  
 Lauriacum (Enns), 281, Jobst, W. 1975  
 Lauriacum (Enns), 282, Jobst, W. 1975  
 Lauriacum (Enns), 283, Jobst, W. 1975  
 Lauriacum (Enns), 284, Jobst, W. 1975  
 Lauriacum (Enns), 285, Jobst, W. 1975  
 Lauriacum (Enns), 286, Jobst, W. 1975  
 Lauriacum (Enns), 287, Jobst, W. 1975  
 Lauriacum (Enns), 289, Jobst, W. 1975  
 Lauriacum (Enns), 290, Jobst, W. 1975  
 Lauriacum (Enns), 291, Jobst, W. 1975  
 Lauriacum (Enns), 293, Jobst, W. 1975  
 Lauriacum (Enns), 294, Jobst, W. 1975  
 Lauriacum (Enns), Abb. 62 L, Schicker, J. 1933  
 Lauriacum (Enns), XLVI 2, Kloiber, A. 1962  
 Lauriacum (Enns), grave 27b, Vetters, H. & Karnitsch, P. et al, 1960  
 Lauriacum (Enns), grave 62 1, Vetters, H. & Karnitsch, P. et al, 1960  
 Lauriacum (Enns), Taf.XXX grave 62 1, Vetters, H. & Karnitsch, P. et al, 1960  
 Lavoye, nr Clermont, Meuse, plate XXXIII, Liénard, F. 1884  
 Leicester, fig. 81. 2, Kenyon, K. 1948  
 Leithaprodersdorf, VB Eisenstadt-Umgebung, Abb. 518, Adler, H.ed. 1993  
 Lincoln, 1866 12. 3. 131, British Museum  
 Lindau-Aeschach, Abb. 1, Overbeck, B. 1968  
 London, 15083, Museum of London  
 London, 1851. 3. 31. 6, British Museum  
 London, 56. 7. 1. 985, British Museum  
 Longues Raies, de Soissons, plate 8 2, Boulanger, C. 1902  
 Lorenzberg bei Epfach, Taf. 39 33, Werner, J. 1969  
 Lower Hacheston, 504, Hattat, R. 1985



Luxembourg (no further prov), 1900-2/26, Musée d'Histoire et d'Art, Luxembourg  
 Luxembourg (no further prov), 3-597, Musée d'Histoire et d'Art, Luxembourg  
 Luxembourg (no further prov), 3-700, Musée d'Histoire et d'Art, Luxembourg  
 Luxembourg (no further prov), no inv.no, Musée d'Histoire et d'Art, Luxembourg  
 Lydney, 26, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Lydney, 27, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Lyon prov. locale, 539, Boucher, S. Perdu, G. & Feugère 1980  
 Maastricht, MAP 10-12. 2/1/0, Sectie Archeologie Gemeente Maastricht  
 Maastricht, MAVP 1-5-7a, Sectie Archeologie Gemeente Maastricht  
 Maastricht, MAVP16-18. 1/4/26, Sectie Archeologie Gemeente Maastricht  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 2, Lindenschmidt, L. 1881  
 Mainz, R4128, Landesmuseum Mainz  
 Mainz, 29959, RGZM, illustrated in inventory book  
 Mainz, 31780, MAN St. Ger.  
 Mamer (Luxembourg), no inv.no. Musée d'Histoire et d'Art, Luxembourg  
 Manching (Donau), p. 211 Abb. 1 top, Rieder, K. & Tillmann, A. 1995  
 Manching (Donau), p. 211 Abb. 1 mid R, Rieder, K. & Tillmann, A. 1995  
 Mandeure, plate VII 162, Lerat, L. 1957  
 Mandeure, plate XIX 321, Lerat, L. 1956  
 Mangolding (Umland Regensburg), Taf. 144 C1, Fischer, T. 1990  
 Marteville, 71/0 61 fig. 52, Loizel, M. 1977  
 Mühling VB Scheibbs, Abb. 624, Adler, H.ed, 1993  
 Münchhof, VB Neusiedl-am-See, Abb. 562, Adler, H.ed, 1992  
 Münchhof, VB Neusiedl-am-See, Abb. 563, Adler, H.ed, 1992  
 Münchhof, VB Neusiedl-am-See, Abb. 564, Adler, H.ed, 1992  
 Münchhof, VB Neusiedl-am-See, Abb. 565, Adler, H.ed, 1992  
 Münchhof, VB Neudsiedl-am-See, Abb. 737, Adler, H.ed, 1990  
 Münchhof, VB Neudsiedl-am-See, Abb. 738, Adler, H.ed, 1990  
 Münchhof, VB Neusiedl-am-See, Abb. 390, Adler, H.ed, 1987  
 Münchhof, VB Neusiedl-am-See, Abb. 468, Adler, H.ed, 1980  
 Kirchdorf-Micheldorf, fig. 3 c, Abramic, M. & Kaschnitz, G. 1909  
 Mistelbach, fig. 2, Abramic, M. 1909  
 München, Taf. 25 3, Keller, E. 1971  
 München, Taf. 28. 1, Keller, E. 1971  
 Naix, nr .Ligny, Meuse, plate XXVIII 22, Liénard, F. 1881  
 Neckenmarkt, VB Oberpullendorf, Abb. 744, Adler, H.ed. 1990  
 Neckenmarkt, VB Oberpullendorf, Abb. 745, Adler, H.ed. 1990  
 Neuburg an der Donau, grave 15, Keller, E. 1979  
 Neuburg an der Donau, grave 56, Keller, E. 1979  
 Neuburg an der Donau, grave 87, Keller, E. 1979  
 Nickelsdorf, VB Neusiedl-am-See, Abb. 562, Adler, H.ed. 1991  
 Nijmegen, 718, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen



Nijmegen, 720, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 722, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 723, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 724, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 725, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 728, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 730, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 731, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 732, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 229, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 27, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 28a, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, E.IV. 28b, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 118, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 21C, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 262, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 40C, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 72A, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 722a/41/7, GM Kam Museum, Nijmegen  
 Nijmegen, KAM 3. 1950 4, GM Kam Museum, Nijmegen  
 Nijmegen, Ri. 1. 3. 1. 12, GM Kam Museum, Nijmegen  
 Nijmegen, K.A.M. 4 1950. 26, Van Buchems card index, GM Kam Museum, Nijmegen  
 Nijmegen, K.A.M. 733, Van Buchems card index, GM Kam Museum, Nijmegen  
 Nijmegen, R.M.O.L.Vst 50, Van Buchems card index, GM Kam Museum, Nijmegen  
 Nijmegen, R.M.O.L.nst 134, Van Buchems card index, GM Kam Museum, Nijmegen  
 Nijmegen, Brk 1951/89, Steures, D.unpublished.  
 Nijmegen, Ma 1963/42, Steures, D.unpublished.  
 North-west France (arbitrary point), 26995, MAN St. Ger.  
 Norfolk (arbitrary point), 1268, Hattatt, R. 1987  
 Noyelles-sur-mer, Baie de Somme, sép. 16 2, Piton, D. & Marchand, H. 1978  
 Otterfing, Taf. 46 3, Keller, E. 1971  
 Oudenburg, plate I 3 grave 1, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate I 6 grave 2, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate IX 2 grave 27, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LII 4 grave 169, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LIII 1 grave 172, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LVII 4 grave 206, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LVIII 2 grave 188, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LVIII 6 grave 190, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate V 1 grave 14, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate VI 1 grave 19, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate VI 4, Mertens, J. & Van Impe, L. 1971



Oudenburg, plate VIII 4 grave 26, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XII 1 grave 34, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XIV 1 grave 42, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XLI 2 grave 129, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XLIV 132, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XVI 7 grave 59, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XVII 1 grave 57, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXIV 2 grave 72, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXVII 1 grave 83, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIII 5 grave 103, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIV 3 grave 104, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIX 2 grave 115, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXVIII 2 grave 114, Mertens, J. & Van Impe, L. 1971  
 Passau, Abb. 4b, Pröttel, P. 1988  
 Pécs, grave R112, Fülep, F. 1977  
 Pécs, grave R15, Fülep, F. 1977  
 Pécs, grave R151-63 2, Fülep, F. 1977  
 Pécs, grave R182, Fülep, F. 1977  
 Pécs, grave R183, Fülep, F. 1977  
 Pécs, grave R207, Fülep, F. 1977  
 Pécs, grave R212, Fülep, F. 1977  
 Pécs, grave R214, Fülep, F. 1977  
 Pécs, grave R215, Fülep, F. 1977  
 Pécs, grave R230, Fülep, F. 1977  
 Pécs, grave R260, Fülep, F. 1977  
 Pécs, grave R308, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 756, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 757, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 845, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 890, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 910, Adler, H.ed. 1991  
 Petronell (Carnuntum), Abb. 1054, Adler, H.ed. 1989  
 Petronell (Carnuntum), Abb. 1106, Adler, H.ed. 1989  
 Petronell (Carnuntum), Abb. 697, Adler, H.ed. 1993  
 Petronell (Carnuntum), Abb. 680, Adler, H.ed. 1988  
 Petronell (Carnuntum), Abb. 21 R, Miltner, F. 1933  
 Petronell (Carnuntum), Abb. 545, Adler, H.ed. 1979  
 Petronell (Carnuntum), fig. 30 A, Nowotny, E. 1914  
 Petronell (Carnuntum), fig. 30 B, Nowotny, E. 1914  
 Petronell (Carnuntum), fig. 30 C, Nowotny, E. 1914  
 Petronell (Carnuntum), Abb. 5 fig. 21, Kuchenbuch, F. 1954  
 Petronell (Carnuntum), Abb. 5 fig. 23, Kuchenbuch, F. 1954



Podersdorf am see, VB Neusiedl am See, Abb. 764, Adler, H. 1990  
 Pont-Remy, La Vallée Valchanchie, 493, Legros, V. unpublished  
 Potzneusiedl, MG Gattendorf-Neudorf, Abb. 510, Adler, H.ed. 1985/6  
 Potzneusiedl, MG Gattendorf-Neudorf, Abb. 712, Adler, H.ed. 1982  
 Rankweil, Bezirk Feldkirch, Taf. 28 1, Overbeck, B. 1982  
 Regensburg, grave 513 2, Von Schnurbein, S. 1977  
 Regensburg, grave 932 4, Von Schnurbein, S. 1977  
 Regensburg, Taf. 165 14, Von Schnurbein, S. 1977  
 Reims, 817, MAN St. Ger.  
 Reims, fig. 34, Morin-Jean, 1910  
 Rekawinkel, VB Wien-Umgebung, Abb. 1265, Adler, H.ed. 1989  
 Remagen, Taf.IV 16, Reauleux, 1885  
 Richborough, 17 [325(7350697)], Bushe-Foxe, J. 1928 [& Bayley et al forthcoming]  
 Richborough, 64 [321(7351707)], Bushe-Foxe, J. 1949 [& Bayley et al forthcoming]  
 Richborough, 65 [320(7351700)], Bushe-Foxe, J. 1949 [& Bayley et al forthcoming]  
 Riekofen (umland Regensburg), grave 13 Taf. 211 B1, Fischer, T. 1990  
 Ringelsdorf, Abb. 1141, Adler, H.ed, 1990  
 Ringelsdorf, Abb. 835, Adler, H.ed, 1992  
 Sagvar, grave 101 1, Burger, A. 1966  
 Sagvar, grave 108 1, Burger, A. 1966  
 Sagvar, grave 11, Burger, A. 1966  
 Sagvar, grave 112 1, Burger, A. 1966  
 Sagvar, grave 124 2, Burger, A. 1966  
 Sagvar, grave 129 1, Burger, A. 1966  
 Sagvar, grave 15 1, Burger, A. 1966  
 Sagvar, grave 152 8, Burger, A. 1966  
 Sagvar, grave 154 3, Burger, A. 1966  
 Sagvar, grave 155 1, Burger, A. 1966  
 Sagvar, grave 165 1, Burger, A. 1966  
 Sagvar, grave 170 1, Burger, A. 1966  
 Sagvar, grave 174 1, Burger, A. 1966  
 Sagvar, grave 18. 1, Burger, A. 1966  
 Sagvar, grave 196 1, Burger, A. 1966  
 Sagvar, grave 198 2, Burger, A. 1966  
 Sagvar, grave 218 2, Burger, A. 1966  
 Sagvar, grave 233 14, Burger, A. 1966  
 Sagvar, grave 241 2, Burger, A. 1966  
 Sagvar, grave 26 5, Burger, A. 1966  
 Sagvar, grave 270 2, Burger, A. 1966  
 Sagvar, grave 288 1, Burger, A. 1966  
 Sagvar, grave 292 5, Burger, A. 1966  
 Sagvar, grave 331 4, Burger, A. 1966



Sagvar, grave 336 3, Burger, A. 1966  
 Sagvar, grave 56 1, Burger, A. 1966  
 Sagvar, grave 65 1, Burger, A. 1966  
 Sagvar, grave 74 1, Burger, A. 1966  
 Salzburg-Klessheim, 1, Hell, M. 1943a  
 Schutzen am Gebirge, VB Eisenstadt, Abb. 642, Adler, H.ed, 1989  
 Seebruck, Taf. 44 7, Keller, E. 1971  
 Seestall, Taf. 13 13, Keller, E. 1971  
 Shorden Brae, fig. 14 173, Snape, M, 1993  
 Silchester, fig. 19, Boon, G. 1974  
 Somogyzsil, grave 112 1, Burger, A. 1979  
 Somogyzsil, grave 114 1, Burger, A. 1979  
 Somogyzsil, grave 130 1, Burger, A. 1979  
 Somogyzsil, grave 14 2, Burger, A. 1979  
 Somogyzsil, grave 15 3, Burger, A. 1979  
 Somogyzsil, grave 19 1, Burger, A. 1979  
 Somogyzsil, grave 33 6, Burger, A. 1979  
 Somogyzsil, grave 39 1, Burger, A. 1979  
 Somogyzsil, grave 41 5, Burger, A. 1979  
 Somogyzsil, grave 48 1, Burger, A. 1979  
 Somogyzsil, grave 5 1, Burger, A. 1979  
 Somogyzsil, grave 60 2, Burger, A. 1979  
 Somogyzsil, grave 64. 65 1, Burger, A. 1979  
 Somogyzsil, grave 79 1, Burger, A. 1979  
 Somogyzsil, grave 81 1, Burger, A. 1979  
 Somogyzsil, grave 84 1, Burger, A. 1979  
 South Shields, 3. 44, Allason-Jones, L. & Miket, R. 1984  
 Stadtbergen, Taf. 12 1, Keller, E. 1979  
 Stadtbergen, Taf. 10 14, Keller, E. 1971  
 Stein-am-Rhein, Taf. 24 233, Höneisen, M.ed. 1993  
 Stephanskirchen, Taf. 31 15, Keller, E. 1971  
 St. Marcel, Paris, AM 755/3, Musée Carnavalet, 1985  
 Stowting, fig. 10 29, Brailsford, J. 1951  
 Stowting, 1904. 6. 28. 7, British Museum  
 St. Pierre sur Dives, Calvados, 556, Dollfus, M. 1973  
 St. Polten, 24, Scherrer, P. 1991  
 St. Polten, 25, Scherrer, P. 1991  
 St. Polten, 26, Scherrer, P. 1991  
 St. Polten, Abb. 1194, Adler, H.ed. 1990  
 Strasbourg, 1341, Musée des Antiquités et d'Archéologie, Strasbourg  
 Strasbourg, 1931, Musée des Antiquités et d'Archéologie, Strasbourg  
 Strasbourg, 19315, Musée des Antiquités et d'Archéologie, Strasbourg



Strasbourg, 2658, Musée des Antiquités et d'Archéologie, Strasbourg  
 Strasbourg, Taf.XXXIX (b), Forrer, R. 1927  
 Strasbourg, Taf.XXXIX (a), Forrer, R. 1927  
 Straubing, p. 49 R, Prammer, J. 1985  
 Straubing, Abb. 5 1, Sage, W. 1976  
 Sulz im Wienerwald, Abb. 585, Adler, H.ed. 1987  
 Sulz im Wienerwald, Abb. 587, Adler, H.ed. 1987  
 Thames arbitrary point, 86. 3. 23. 1, British Museum  
 Tournai, f72 127, Cabuy, Y. 1992  
 Tournai, 45, Brulet, R. & Coulon, G. 1977  
 Tokod, grave 104/5, Mócsy, A. 1981  
 Tokod, grave 19, Mócsy, A. 1981  
 Tokod, grave 28, Mócsy, A. 1981  
 Tokod, grave 85, Mócsy, A. 1981  
 Tokod, grave 93, Mócsy, A. 1981  
 Tokod, grave 94, Mócsy, A. 1981  
 Tongeren, plate 59 94, Vanvinckenroye, W. 1984  
 Tongeren, plate 65 99, Vanvinckenroye, W. 1984  
 Tongeren/Florenville, no inv.no. Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, Loe10189, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, Loe10189, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, 472, Gallo-Romeins Museum Tongeren  
 Tongeren, 953, Gallo-Romeins Museum Tongeren  
 Tongeren, Sc. 110.s.c. 810, Gallo-Romeins Museum Tongeren  
 Tongeren, no inv.no.(2), Gallo-Romeins Museum Tongeren  
 Tongeren, no inv.no.(3), Gallo-Romeins Museum Tongeren  
 Totis (Tátá), Abb. 1, Röder, F. 1930  
 Triesen, Liechtenstein, Taf. 39 1, Overbeck, B. 1982  
 Trier, S.T. 4751a, Rheinisches Landesmuseum Trier  
 Trier, inv.01, 12, Rheinisches Landesmuseum Trier  
 Trier, inv.06, 509, Rheinisches Landesmuseum Trier  
 Trier, inv. 10, 406, Rheinisches Landesmuseum Trier  
 Trier, inv. 17, 520, Rheinisches Landesmuseum Trier  
 Trier, inv. 28, 107, Rheinisches Landesmuseum Trier  
 Trier, inv. 30, 285, Rheinisches Landesmuseum Trier  
 Trier, inv. 38, 2140, Rheinisches Landesmuseum Trier  
 Trier, inv. 38, 2142, Rheinisches Landesmuseum Trier  
 Trier, inv. 83, 89, Rheinisches Landesmuseum Trier  
 Trier, inv. 83, 32, Rheinisches Landesmuseum Trier  
 Trier, inv. 9213, Rheinisches Landesmuseum Trier  
 Trier, inv.G. 11363, Rheinisches Landesmuseum Trier  
 Trier, inv.G. 1365, Rheinisches Landesmuseum Trier



Trier, K.P.V. RLT photos  
 Trier, RD. 65. 135, RLT photos  
 Trier, RD. 73. 8 mid mid, RLT photos  
 Trier, RD. 73. 8 top L, RLT photos  
 Trier, RD. 73. 8 bttm L, RLT photos  
 Trier, RE. 80. 413/69, RLT photos  
 Trier, RE. 81. 629/73, RLT photos  
 Trier, RE. 83. 48/12, RLT photos  
 Trier, RE. 85. 39/60, RLT photos  
 Trier, RE. 85. 39/64, RLT photos  
 Trier, RE. 86. 173/53, RLT photos  
 Trier, RE. 93. 12/12, RLT photos  
 Trier, 26077, RGZM  
 Trier, doubtful provenance, S.T. 3886b (156c), Cüppers, H.et al, 1984 & Rheinisches Landesmuseum Trier  
 Trier, doubtful provenance, inv.05, 295a (156f), Cüppers, H.et al, 1984 & Rheinisches Landesmuseum Trier  
 Trier, doubtful provenance, inv.G1364 (156e), Cüppers, H.et al, 1984 & Rheinisches Landesmuseum Trier  
 Tulln, grave 10 Abb. 13, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 11 Abb. 15, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 49 Abb. 22, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 49. Abb. 25, Mayr, U. & Winkler, K. 1991  
 Unterpetersdorf, VB Oberpullendorf, Abb. 568, Lackner, A. 1994  
 Unterpetersdorf, VB Oberpullendorf, Abb. 569, Lackner, A. 1994  
 Vaduz, Taf. 40 1, Overbeck, B. 1982  
 Valley, Taf. 21 5, Keller, E. 1971  
 Vermand doubtful provenance, 84953 neg. 135631, MAN St. Ger.  
 Vienne, p. 128 219, Boucher, S. 1971  
 Vienne, p. 128 222, Boucher, S. 1971  
 Vilters, Bez.Sargans, Taf. 35 7, Overbeck, B. 1982  
 Virton, 8, Masséart, C. unpubl. excav  
 Virunum, Kärnten, Taf. 33 218, Gugl, C. 1995  
 Virunum, Kärnten, Taf. 33 219, Gugl, C. 1995  
 Virunum, Kärnten, Taf. 33 220, Gugl, C. 1995  
 Virunum, Kärnten, Taf. 33 221, Gugl, C. 1995  
 Vorion nr. Trier, S.T. 12118, Rheinisches Landesmuseum Trier  
 Walterdane-Helmsange, 1990-63/22, Musée d'Histoire et d'Art, Luxembourg  
 Warlus, Pas-de-Calais, 81139c, MAN St. Ger.  
 Wessling, Taf. 38 14, Keller, E. 1971  
 Wessling, Taf. 40 4, Keller, E. 1971  
 Wessling, Taf. 41 8, Keller, E. 1971



Windisch, Taf. 29 4, Ettlinger, E. 1973  
 Wielenbach, Taf. 45 12, Keller, E. 1971  
 Worms, 22827, RGZM, illustrated in inventory book  
 Wroxeter (Uriconium), p. 78 1, Anderson, J. 1867  
 Yvelines, Mareil-sur-Mauldre, 51759, MAN St. Ger.  
 Zeche Erin, Castrop-Rauxel, Westfalen, Taf. 20 17, Werner, J. 1970  
 Zerkegem-Jabbeke, fig. 8, Van Doorselaer et al, 1987  
 Zurndorf, VB Neusiedl am See, Abb. 606, Adler, H.ed. 1992  
 Zurndorf, VB Neusiedl am See, Abb. 467, Adler, H.ed. 1988  
 Zurndorf, VB Neusiedl am See, Abb. 491, Adler, H.ed. 1980

#### **Type 3/4 crossbow brooches with a10 foot decoration**

Azlburg, Straubing, Taf. 7 top R, Menghin, W. 1990  
 Gauting, Taf. 36 12, Keller, E. 1971  
 Koborn-Gondorf, Taf. 18 17, Schulze-Dörlamm, M. 1990  
 Gunzburg, Taf. 12 5, Keller, E. 1971  
 Krefeld-Gellep, grave 2793, Pirling, R. 1979  
 Krefeld-Gellep, Taf. 22 3 grave 3043, Pirling, R. 1989  
 Lauriacum (Enns), 274, Jobst, W. 1975  
 Kirchdorf-Micheldorf, fig. 3 c, Abramic, M. & Kaschnitz, G. 1909  
 München, Taf. 25 3, Keller, E. 1971  
 Nijmegen, E.IV. 28b, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, Brk 1951/89, Steures, D.unpublished  
 Reims, fig. 34, Morin-Jean, 1910  
 Strasbourg, 19315, Musée des Antiquités et d'Archéologie, Strasbourg  
 Trier, inv. 38, 2142, Rheinisches Landesmuseum Trier  
 Vienne, p. 128 219, Boucher, S. 1971  
 Virunum, Kärnten, Taf. 33 221, Gugl, C. 1995  
 Zurndorf, VB Neusiedl am See, Abb. 491, Adler, H.ed. 1980

#### **Type 3/4 crossbow brooches with b2 foot**

Aisne (arbitrary point), 54. 4 (22545), Musée de Laon  
 Altenstadt, Taf. 35 2, Keller, E. 1971  
 Augst, Taf. 53 1464, Riha, E. 1979  
 Augst, Taf. 53 1467, Riha, E. 1979  
 Augst, Taf. 53 1468, Riha, E. 1979  
 Augst, Taf. 53 1469, Riha, E. 1979  
 Augst, Taf. 53 1470, Riha, E. 1979  
 Augst, Taf. 54 1471, Riha, E. 1979  
 Augst, Taf. 54 1472, Riha, E. 1979  
 Augst, Taf. 54 1477, Riha, E. 1979  
 Augst, Taf. 54 1479, Riha, E. 1979



Augst, Taf. 37 2732, Riha, E. 1994  
 Augst, Taf. 37 2735, Riha, E. 1994  
 Augsburg, Taf. 7 5, Keller, E. 1971  
 Avenches, fig. 78, Bogli, H. 1984  
 Azlburg, Straubing, grave 5b 2, Prammer, J. 1985  
 Basel, grave 317, Degen, R. 1957  
 Berg, Taf. 20 8, Keller, E. 1971  
 Bregenz, Taf. 10 164, Overbeck, B. 1982  
 Brumath, Grafenburg, Alsace, fig. 26 A, Pétry, F. 1972  
 Buchendorf, Taf. 36 11, Keller, E. 1971  
 Budapest (Aquincum), grave 11 (vii), Tópal, J. 1993  
 Bürgli (unteres, nr.Schwaderloch, Switz, p. 26 L, Drack, W. 1980  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
 Douvrend, nr Dieppe, 553, Dollfus, M. 1973  
 Dunapentele, XXXVI, Kovrig, I. 1937  
 Dunapentele, 291, Landesmuseum Mainz  
 Dunapentele, 16469, RGZM  
 Dunapentele, grave 1056, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1066, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 11, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1141, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1188, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 33, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 49, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 56, Bóna, I. & Vágo, E. 1976  
 East Anglia (arbitrary point), 1266, Hattatt, R. 1987  
 St. Martin-de-Fontenay, Calvados, plate 37, Pilet, C. 1994  
 Fussach, Bez.Bregenz, Taf. 31 4, Overbeck, B. 1982  
 Gattendorf, VB Neusiedl am See, Abb. 449, Adler, H.ed 1985/6  
 Girm, VB Oberpullendorf, Abb. 696, Adler, H.ed. 1990  
 Girm, VB Oberpullendorf, Abb. 227, Adler, H.ed. 1976  
 Hungary (arbitrary point) doubtful provenance, 21397, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21406, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21413, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21428, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21436, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21445, RGZM  
 Keszthely-Dobogó, grave 34, Sagi, K. 1981  
 Keszthely-Dobogó, grave 65, Sagi, K. 1981  
 Keszthely-Dobogó, grave 8, Sagi, K. 1981  
 Kirchheim bei München, grave 7 Abb. 5 8, Keller, E. 1989



Kirchlibuck, Switz. p. 31 M, Drack, W. 1980

Kleinaitingen, Taf. 13 11, Keller, E. 1971

Köln, 28, 567, Römisch-Germanisches Museum, Köln

Krefeld-Gellep, grave 1493, Pirling, R. 1974

Krefeld-Gellep, grave 2646, Pirling, R. 1979

Krefeld-Gellep, grave 2832, Pirling, R. 1979

Krefeld-Gellep, grave 2872, Pirling, R. 1979

Krefeld-Gellep, grave 2885, Pirling, R. 1979

Krefeld-Gellep, Taf. 28 5 grave 3093, Pirling, R. 1989

Lauriacum (Enns), Abb. 806, Adler, H. 1983

Lauriacum (Enns), 252, Jobst, W. 1975

Lauriacum (Enns), 259, Jobst, W. 1975

Lauriacum (Enns), 260, Jobst, W. 1975

Lauriacum (Enns), 261, Jobst, W. 1975

Lauriacum (Enns), 262, Jobst, W. 1975

Lauriacum (Enns), 264, Jobst, W. 1975

Lauriacum (Enns), 265, Jobst, W. 1975

Lauriacum (Enns), 266, Jobst, W. 1975

Lauriacum (Enns), 268, Jobst, W. 1975

Lauriacum (Enns), Abb. 62 L, Schicker, J. 1933

Lauriacum (Enns), XLVI 2, Kloiber, A. 1962

Lauriacum (Enns), grave 27b, Vettters, H. & Karnitsch, P. et al, 1960

Luxembourg (no further prov), 3-597, Musée d'Histoire et d'Art, Luxembourg

Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 2, Lindenschmidt, L. 1881

Manching (Donau), p. 211 Abb. 1 top, Rieder, K. & Tillmann, A. 1995

Münchhof, VB Neusiedl-am-See, Abb. 390, Adler, H.ed, 1987

Münchhof, VB Neusiedl-am-See, Abb. 468, Adler, H.ed, 1980

Neuburg an der Donau, grave 56, Keller, E. 1979

Nijmegen, 718, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Nijmegen, E.IV. 229, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen

Norfolk (arbitrary point), 1268, Hattatt, R. 1987

Oudenburg, plate IX 2 grave 27, Mertens, J. & Van Impe, L. 1971

Pécs, grave R112, Fülep, F. 1977

Pécs, grave R207, Fülep, F. 1977

Pécs, grave R212, Fülep, F. 1977

Pécs, grave R308, Fülep, F. 1977

Petronell (Carnuntum), fig. 30 C, Nowotny, E. 1914

Petronell (Carnuntum), Abb. 5 fig. 23, Kuchenbuch, F. 1954

Podersdorf am see, VB Neusiedl am See, Abb. 764, Adler, H. 1990

Potzneusiedl, MG Gattendorf-Neudorf, Abb. 712, Adler, H.ed. 1982

Regensburg, grave 513 2, Von Schnurbein, S. 1977

Reims, 817, MAN St. Ger.



Richborough, 65 [320 (7351700)], Bushe-Foxe, J. 1949 [& Bayley et al forthcoming]  
 Ringelsdorf, Abb. 1141, Adler, H.ed, 1990  
 Ringelsdorf, Abb. 835, Adler, H.ed, 1992  
 Sagvar, grave 101 1, Burger, A. 1966  
 Sagvar, grave 108 1, Burger, A. 1966  
 Sagvar, grave 124 2, Burger, A. 1966  
 Sagvar, grave 129 1, Burger, A. 1966  
 Sagvar, grave 15 1, Burger, A. 1966  
 Sagvar, grave 154 3, Burger, A. 1966  
 Sagvar, grave 155 1, Burger, A. 1966  
 Sagvar, grave 165 1, Burger, A. 1966  
 Sagvar, grave 170 1, Burger, A. 1966  
 Sagvar, grave 292 5, Burger, A. 1966  
 Sagvar, grave 56 1, Burger, A. 1966  
 Sagvar, grave 65 1, Burger, A. 1966  
 Salzburg-Klessheim, 1, Hell, M. 1943a  
 Somogyzsil, grave 19 1, Burger, A. 1979  
 Somogyzsil, grave 48 1, Burger, A. 1979  
 Somogyzsil, grave 5 1, Burger, A. 1979  
 Somogyzsil, grave 79 1, Burger, A. 1979  
 Somogyzsil, grave 81 1, Burger, A. 1979  
 Somogyzsil, grave 84 1, Burger, A. 1979  
 Stadtbergen, Taf. 10 14, Keller, E. 1971  
 Stowting, fig. 10 29, Brailsford, J. 1951  
 St. Pierre sur Dives, Calvados, 556, Dollfus, M. 1973  
 St. Polten, 24, Scherrer, P. 1991  
 Straubing, p. 49 R, Prammer, J. 1985  
 Sulz im Wienerwald, Abb. 585, Adler, H.ed. 1987  
 Tournai, 45, Brulet, R. & Coulon, G. 1977  
 Tokod, grave 19, Mócsy, A. 1981  
 Tokod, grave 28, Mócsy, A. 1981  
 Tokod, grave 94, Mócsy, A. 1981  
 Tongeren, plate 59 94, Vanvinckenroye, W. 1984  
 Tongeren, Loe10189, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Totis (Tátá), Abb. 1, Röder, F. 1930  
 Trier, inv. 30, 285, Rheinisches Landesmuseum Trier  
 Trier, inv. 9213, Rheinisches Landesmuseum Trier  
 Trier, K.P.V. RLT photos  
 Trier, 26077, RGZM  
 Trier, inv.01, 12, Rheinisches Landesmuseum Trier  
 Trier, doubtful provenance, inv.G1364 (156e), Cüppers, H.et al, 1984  
 Tulln, grave 10 Abb. 13, Mayr, U. & Winkler, K. 1991



Vaduz, Taf. 40 1, Overbeck, B. 1982  
 Valley, Taf. 21 5, Keller, E. 1971  
 Vermand doubtful provenance, 84953 neg. 135631, MAN St. Ger.  
 Viron, 8, Masséart, C. unpubl. Excav.  
 Virunum, Kärnten, Taf. 33 218, Gugl, C. 1995  
 Wessling, Taf. 40 4, Keller, E. 1971  
 Wessling, Taf. 41 8, Keller, E. 1971  
 Yvelines, Mareil-sur-Mauldre, 51759, MAN St. Ger.

**Type 3/4 crossbow brooches with b4 foot**

Augst, Taf. 37 2731, Riha, E. 1994  
 Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 748, Adler, H.ed. 1989  
 Bardouville, Aisne, p. 276, De Bouard, M. 1970  
 Beaulieu, Par Bardouville, 568, Dollfus, M. 1973  
 Burgheim, Taf. 16 1, Keller, E. 1971  
 Caister-by-Yarmouth, fig. 41 10, Darling, M. & Gurney, D. 1993  
 Champlieu, 28946, MAN St. Ger.  
 Chartres, sép. 743 C77. 7215. 1, Maison d'Archéologie, Chartres  
 Chartres, plate IV 23, Joly, D.et al, 1988  
 Dalheim, 3-578, Musée d'Histoire et d'Art, Luxembourg  
 Dunapentele, grave 947, Bóna, I. & Vágo, E. 1976  
 Edelstal, VB Neusiedl am See, Abb. 341, Adler, H.ed, 1988  
 Grünwald, Taf. 29 6, Keller, E. 1971  
 Guillacourt, 492, Legros, V. unpublished  
 Bürge bei Gundremmingen, Taf. 7 4, Bersu, G. 1964  
 Hungary (arbitrary point) doubtful provenance, 21426, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21602, RGZM  
 Irgenhausen nr Pfäffikon, Schweiz, Abb. 22, Meyer, E. 1969  
 Keszthely-Dobogó, grave 113, Sagi, K. 1981  
 Keszthely-Dobogó, grave 48, Sagi, K. 1981  
 Keszthely-Dobogó, grave 55, Sagi, K. 1981  
 Keszthely-Dobogó, grave 75, Sagi, K. 1981  
 Keszthely-Dobogó, grave 79, Sagi, K. 1981  
 Königsbrunn, Taf. 17 1, Keller, E. 1971  
 Krefeld-Gellep, Taf. 12 9 grave 2992, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 16 1 grave 3027, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 3 10 grave 2911, Pirling, R. 1989  
 Aisne (arbitrary point), O. 229, Musée de Laon  
 Lauriacum (Enns), 248, Jobst, W. 1975  
 Lauriacum (Enns), 256, Jobst, W. 1975  
 Lauriacum (Enns), 257, Jobst, W. 1975  
 Lindau-Aeschach, Abb. 1, Overbeck, B. 1968



London, 15083, Museum of London  
 Lorenzberg bei Epfach, Taf. 39 33, Werner, J. 1969  
 Luxembourg (no further prov), 1900-2/26, Musée d'Histoire et d'Art, Luxembourg  
 Manching (Donau), p. 211 Abb. 1 mid R, Rieder, K. & Tillmann, A. 1995  
 Mangolding (Umland Regensburg), Taf. 144 C1, Fischer, T. 1990  
 Münchhof, VB Neusiedl-am-See, Abb. 564, Adler, H.ed, 1992  
 Münchhof, VB Neusiedl-am-See, Abb. 565, Adler, H.ed, 1992  
 Neckenmarkt, VB Oberpullendorf, Abb. 745, Adler, H.ed. 1990  
 Nijmegen, 730, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, 731, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 21C, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Nijmegen, G.N. 40C, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 North-west France (arbitrary point), 26995, MAN St. Ger.  
 Oudenburg, plate LIII 1 grave 172, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate LVIII 2 grave 188, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XVI 7 grave 59, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIX 2 grave 115, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R15, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 1054, Adler, H.ed. 1989  
 Regensburg, Taf. 165 14, Von Schnurbein, S. 1977  
 Regensburg, Taf. 128 grave 932 4, Von Schnurbein, S. 1977  
 Riekofen (umland Regensburg), grave 13 Taf. 211 B1, Fischer, T. 1990  
 Sagvar, grave 174 1, Burger, A. 1966  
 Somogyzsil, grave 112 1, Burger, A. 1979  
 Somogyzsil, grave 41 5, Burger, A. 1979  
 St. Polten, 25, Scherrer, P. 1991  
 Strasbourg, 1931, Musée des Antiquités et d'Archéologie, Strasbourg  
 Strasbourg, Taf.XXXIX (b), Forrer, R. 1927  
 Trier, RD. 65. 135, RLT photos  
 Trier, doubtful provenance, S.T. 3886b(156c), Cüppers, H.et al, 1984  
 Tulln, grave 11 Abb. 15, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 49 Abb. 22, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 49. Abb. 25, Mayr, U. & Winkler, K. 1991

#### **Type 3/4 crossbow brooches with b5 foot**

Amay, région Liège, I/0823, Musée Curtius, Liège  
 Apetlon, VB Neusiedl-am-see, Abb. 535, Adler, H.ed. 1989  
 Apetlon, VB Neusiedl-am-see, Abb. 666, Adler, H.ed. 1982  
 Augst, Taf. 54 1473, Riha, E. 1979  
 Augst, Taf. 54 1478, Riha, E. 1979  
 Augst, Taf. 37 2733, Riha, E. 1994  
 Augsburg, Taf. 7 8, Keller, E. 1971



Basel, grave 312, Degen, R. 1957  
 Bregenz, SG588, Jacobs, J. & Von Schwerzenbach, K. 1910  
 Breitenbrunn, VB Eisenstadt-Umgebung, Abb. 411, Adler, H.ed 1985/6  
 Buda-Keszi, afb. 15, Van Buchem, H. 1973  
 Edelstal, VB Neusiedl am See, Abb. 342, Adler, H.ed, 1988  
 Gunzburg, Taf. 12 4, Keller, E. 1971  
 Herstal, Liège, 4/15, Musée Curtius, Liège  
 Hungary (arbitrary point) doubtful provenance, 21422, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21427, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21437, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21439, RGZM  
 Jois, VB Neusiedl am See, Abb. 367, Adler, H.ed. 1988  
 Keszthely-Dobogó, grave 44, Sagi, K. 1981  
 Keszthely-Dobogó, grave 61, Sagi, K. 1981  
 Köln, afb. 7, Van Buchem, H. 1970  
 Köln, 53, 463, Römisch-Germanisches Museum, Köln  
 Krefeld-Gellep, grave 2881, Pirling, R. 1979  
 Lauriacum (Enns), 250, Jobst, W. 1975  
 Lauriacum (Enns), 258, Jobst, W. 1975  
 Leithaprodersdorf, VB Eisenstadt-Umgebung, Abb. 518, Adler, H.ed. 1993  
 Longues Raies, de Soissons, plate 8 2, Boulanger, C. 1902  
 Maastricht, MAVP 1-5-7a, Sectie Archeologie Gemeente Maastricht  
 Mandeure, plate XIX 321, Lerat, L. 1956  
 Münchhof, VB Neudsiedl-am-See, Abb. 737, Adler, H.ed, 1990  
 Naix, nr .Ligny, Meuse, plate XXVIII 22, Liénard, F. 1881  
 Nijmegen, K.A.M. 4 1950. 26, Van Buchems card index GM Kam Museum, Nijmegen  
 Oudenburg, plate XLI 2 grave 129, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXIV 2 grave 72, Mertens, J. & Van Impe, L. 1971  
 Petronell (Carnuntum), Abb. 756, Adler, H.ed. 1991  
 Sagvar, grave 196 1, Burger, A. 1966  
 Sagvar, grave 241 2, Burger, A. 1966  
 Sagvar, grave 270 2, Burger, A. 1966  
 Sagvar, grave 331 4, Burger, A. 1966  
 Sagvar, grave 336 3, Burger, A. 1966  
 Sagvar, grave 74 1, Burger, A. 1966  
 Seestall, Taf. 13 13, Keller, E. 1971  
 Somogyzsil, grave 130 1, Burger, A. 1979  
 Somogyzsil, grave 14 2, Burger, A. 1979  
 Somogyzsil, grave 15 3, Burger, A. 1979  
 Straubing, Abb. 5 1, Sage, W. 1976  
 Tongeren, Loe10189(, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Trier, RE. 93. 12/12, RLT photos



Trier, doubtful provenance, inv.05, 295a(156f), Cüppers, H. et al, 1984 & Rheinisches Landesmuseum Trier  
 Unterpetersdorf, VB Oberpullendorf, Abb. 569, Lackner, A. 1994  
 Virunum, Kärnten, Taf. 33 219, Gugl, C. 1995  
 Zeche Erin, Castrop-Rauxel, Westfalen, Taf. 20 17, Werner, J. 1970

#### **Type 3/4 crossbow brooches with b7 foot**

St. Albans, fig. 44 33, Wheeler, R. & Wheeler, T. 1936  
 Altenstadt, Taf. 33 9, Keller, E. 1971  
 Augst, Taf. 37 2734, Riha, E. 1994  
 Augst, Taf. 38 2736, Riha, E. 1994  
 Bernhardsthal, VB Mistelbach, Abb. 874, Adler, H. ed. 1989  
 Brigham, West Cumberland, plate II 8a, Haverfield, F. 1919  
 Caerwent, Acc.No.D255?, Newport Museum & Art Gallery  
 Caister-by-Yarmouth, fig. 41 9, Darling, M. & Gurney, D. 1993  
 Dunapentele, grave 1033, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 944, Bóna, I. & Vágo, E. 1976  
 Ecooust-Saint-Mein, fig. 42. 10, Delmaire, R. & Notte, L. 1988  
 Edelstal, VB Neusiedl am See, Abb. 343, Adler, H. ed, 1988  
 Geer, fig.121, Van der Roest, J. 1994  
 Hungary (arbitrary point) doubtful provenance, 21418, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21438, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21440, RGZM  
 Köln, N3472, Römisch-Germanisches Museum, Köln  
 Krefeld-Gellep, grave 1216, Pirling, R. 1966  
 Krefeld-Gellep, Taf. 8 15 grave 2942, Pirling, R. 1989  
 Lauriacum (Enns), 271, Jobst, W. 1975  
 Nijmegen, Ri. 1. 3. 1. 12, GM Kam Museum, Nijmegen  
 Oudenburg, plate LVIII 6 grave 190, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XLIV 132, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R214, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 845, Adler, H. ed. 1991  
 Rekawinkel, VB Wien-Umgebung, Abb. 1265, Adler, H. ed. 1989  
 Sagvar, grave 112 1, Burger, A. 1966  
 Sagvar, grave 152 8, Burger, A. 1966  
 Sagvar, grave 18. 1, Burger, A. 1966  
 Sagvar, grave 218 2, Burger, A. 1966  
 Somogyzsil, grave 114 1, Burger, A. 1979  
 St. Polten, 26, Scherrer, P. 1991  
 Strasbourg, 1341, Musée des Antiquités et d'Archéologie, Strasbourg  
 Tongeren, Sc. 110.s.c. 810, Gallo-Romeins Museum Tongeren  
 Trier, RD. 73. 8 top L, RLT photos



Windisch, Taf. 29 4, Ettlinger, E. 1973  
Zurndorf, VB Neusiedl am See, Abb. 467, Adler, H.ed. 1988

**Type 3/4 crossbow brooches with c1 foot**

Aisne , 0.2771, Musée de Laon  
Augsburg, Taf.7 9, Keller, E. 1971  
Augst, Taf. 56 1490, Riha, E. 1979  
Augst, Taf. 56 1491, Riha, E. 1979  
Augsburg, Taf. 6 4, Keller, E. 1971  
Basel, Abb.43, Laur-Belart, R. 1959  
Besancon, plate XIX 323, Lerat, L. 1956  
Charnay, pl.18 109, Feugère, M. 1977  
Colchester, fig.10 30, Brailsford, J. 1951  
Colchester, 70.4.2.46, British Museum  
Dunapentele, grave 1070, Bóna, I. & Vágo, E. 1976  
Dunapentele grave 150, Bóna, I. & Vágo, E. 1976  
Hungary (arbitrary point) doubtful provenance, 21419, RGZM  
Hungary (arbitrary point) doubtful provenance, 21429, RGZM  
Hungary (arbitrary point) doubtful provenance, 21447, RGZM  
Hungary (arbitrary point) doubtful provenance, 21603, RGZM  
Lauriacum (Enns), Taf. XXX grave 62 1, Vetters, H. & Karnitsch, P. et al 1960  
Lauriacum (Enns), 290, Jobst, W. 1975  
Lauriacum (Enns), 286, Jobst, W. 1975  
London, 1851.3.31.6, British Museum  
Marteville, 71/0 61 fig.52, Loizel, M. 1977  
Mistelbach, fig.2, Abramic, M. 1909  
Neckenmarkt, VB Oberpullendorf, Abb.744, Adler, H.ed. 1990  
Nijmegen, R.M.O.L.nst 134,V an Buchems card index GM Kam Museum Nijmegen  
Nijmegen, KAM 733, Van Buchems card index GM Kam Museum Nijmegen  
Oudenburg, plate LII 4 grave 169 Mertens, J. & Van Impe, L. 1971  
Oudenburg, plate VIII 4 gr.26 Mertens, J. & Van Impe, L. 1971  
Passau, Abb.4b, Pröttel, P. 1988  
Pötzneusiedl, MG Gattendorf-Neudorf, Abb.510, Adler, H.ed. 1985/6  
Sagvar, grave 198 2, Burger, A. 1966  
Sagvar, grave 288 1, Burger, A. 1966  
Tokod, grave 104/5, Mócsy, A. 1981  
Tokod, grave 93, Mócsy, A. 1981  
Tokod, gr. 85, Mócsy, A. 1981  
Trier, RD.73.8 bottom L, RLT photos  
Worms, 22827, RGZM illustrated in inventory book



### **Type 3/4 crossbow brooches with c5 foot**

Altbachtal, nr. Trier, S.T.11545, Rheinisches Landesmuseum Trier  
Augst, Taf. 55 1482, Riha, E. 1979  
Augst, Taf. 55 1483, Riha, E. 1979  
Augst, Taf. 55 1486, Riha, E. 1979  
Augsburg, Taf.7 6, Keller, E. 1971  
Azlburg, Straubing, Abb.117, Prammer, J. 1989  
Chartres, sép.743 C77.7405 1, Maison d'Archéologie, Chartres  
Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
Dunapentele, grave 104, Bóna, I. & Vágo, E. 1976  
Gellep, textAbb.5 3, Behrens, G. 1919  
Krefeld-Gellep, grave 2895, Pirling, R. 1979  
Lauriacum, 272, Jobst, W. 1975  
Lauriacum, 273, Jobst, W. 1975  
Mainz, R4128, Landesmuseum Mainz  
Mamer (Luxembourg), no.ref. Musée d'Histoire et d'Art, Luxembourg  
Oudenburg, plate XXVII 1 grave 83, Mertens, J. & Van Impe, L. 1971  
Remagen, Taf. IV 16, Reauleux, 1885  
Sagvar, grave 26 5, Burger, A. 1966  
Shorden Brae, fig.14 173, Snape, M. 1993  
Somogyzsil, grave 33 6, Burger, A. 1979  
Thames (arbitrary point), 86.3.23.1, British Museum  
Trier, RE.85.39/60, RLT photos

### **Type 3/4 crossbow brooches with d2 foot**

Augsburg, Taf. 6 9, Keller, E. 1971  
Augst, Taf. 38 2738, Riha, E. 1994  
Balzers, Gutenberg, Liechtenstein, Taf. 36 6, Overbeck, B. 1982  
Bregenz, Taf.10 165, Overbeck, B. 1982  
Bruckneudorf, VB Neusiedl am See, Abb.415, Adler, H.ed. 1985/6  
Budapest (Aquincum), grave 88, Tópal, J. 1993  
Budapest (Aquincum), grave 92/1, Tópal, J. 1993  
Bürgli (unteres, nr.Schwaderloch, Switz) , p.26, Drack, W. 1980  
Charnay, 111, Feugère, M. 1977  
Chartres, sép.766 C77.7384.1, Maison d'Archéologie, Chartres  
Dunapentele, 16470, Landesmuseum Mainz  
Dunapentele, grave 1042, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1047, Bóna, I. & Vago, E. 1976  
Evreux, 485, Fauduet, I. 1992  
Evreux, 559, Dollfus, M. 1973  
KlosterNeuburg, grave 10 Taf. 12 2, Neugebauer, J. & Neugebauer, C. 1986  
Krefeld-Gellep, grave 1124, Pirling, R. 1966



Krefeld-Gellep, grave 1567, Pirling, R. 1974  
 Krefeld-Gellep, grave 2657, Pirling, R. 1979  
 Lauriacum, 275, Jobst, W. 1975  
 Lauriacum, 276, Jobst, W. 1975  
 Lauriacum, 277, Jobst, W. 1975  
 Lauriacum, 278, Jobst, W. 1975  
 Lauriacum, 281, Jobst, W. 1975  
 Lauriacum, 282, Jobst, W. 1975  
 Lauriacum, 283, Jobst, W. 1975  
 Lauriacum, 284, Jobst, W. 1975  
 Lauriacum, 285, Jobst, W. 1975  
 Lauriacum, 287, Jobst, W. 1975  
 Lauriacum, 289, Jobst, W. 1975  
 Lower Hacheston, 504, Hattat, R. 1985  
 Luxembourg (no further provenance), 3-700, Musée d'Histoire et d'Art, Luxembourg  
 Lydney, 27, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 München, Taf. 28.1, Keller, E. 1971  
 Neuburg an der Donau, grave 15, Keller, E. 1979  
 Neuburg an der Donau, grave 87, Keller, E. 1979  
 Nijmegen, E.IV.28a, Van Buchems, H. 1941 & GM Kam Museum Nijmegen  
 Nijmegen, G.N.118, Van Buchems, H. 1941 & GM Kam Museum Nijmegen  
 Nijmegen, KAM 3.1950 4, GM Kam Museum Nijmegen  
 Nijmegen, R.M.O.L.Vst 50, Van Buchems card index, GM Kam Museum Nijmegen  
 Noyelles-sur-mer, baie de Somme, sép.16 2, Piton, D. & Marchand, H. 1978  
 Otterfing, Taf.46 3, Keller, E. 1971  
 Oudenburg, plate I 3 grave 1, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate VI 1 grave 19, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XII 1 grave 34, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XIV 1 grave 42, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R151-63 2, Fülep, F. 1977  
 Pécs, grave R183, Fülep, F. 1977  
 Pécs, grave R230, Fülep, F. 1977  
 Petronell(Carnuntum), Abb. 890, Adler, H.ed. 1991  
 Petronell(Carnuntum), Abb. 697, Adler, H.ed. 1993  
 Petronell(Carnuntum), Abb.21 R, Miltner, F. 1933  
 Petronell(Carnuntum), Abb.545, Adler, H.ed. 1979  
 Petronell(Carnuntum), fig. 30 A, Nowotny, E. 1914  
 Petronell(Carnuntum), fig. 30 B, Nowotny, E. 1914  
 Rankweil, Bez Feldkirch, Taf.28 1, Overbeck, B. 1982  
 Sagvar, grave 11, Burger, A. 1966  
 Sagvar, grave 233 14, Burger, A. 1966  
 Somogyzsil, grave 39 1, Burger, A. 1979



Somogyzsil, grave 60 2, Burger, A. 1979  
 Somogyzsil, grave 64.65 1, Burger, A. 1979  
 Strasbourg, Taf.XXXIX, Forrer, R. 1927  
 Trier, S.T.4751a, Rheinisches Landesmuseum Trier  
 Trier, RE.81.629/73, RLT photos  
 Vorion nr. Trier, S.T.12118, Rheinisches Landesmuseum Trier  
 Warlus, Pas-de-Calais, 81139c, MAN St. Ger.  
 Wielenbach, Taf.45 12, Keller, E. 1971

**Crossbow brooches with odd circle & dot foot decoration, mainly type 3/4**

Chalon, 112, Feugère, M. 1977  
 Krefeld-Gellep, grave 2896, Pirling, R. 1979  
 Meaux, p. 199 top, Landais & Giraud, 1984  
 Oudenburg, plate I 6 grave 2, Mertens, J. & Van Impe, L. 1971  
 Poltross Burn, Hadrians Wall, fig. 20 5, Gibson, J. & Simpson, S. 1911  
 Silchester, fig. 19, Boon, G. 1974

**Type 3/4 crossbow brooches with a2/d1 bow decoration**

Apetlon, VB Neusiedl-am-see, Abb. 534, Adler, H.ed. 1989  
 Augst, Taf. 38 2736, Riha, E. 1994  
 Bernhardsthal, VB Mistelbach, Abb. 874, Adler, H.ed. 1989  
 Budapest (Aquincum), grave 11 (vii), Tópal, J. 1993  
 Budapest (Aquincum), grave 88, Tópal, J. 1993  
 Caerwent, Acc.No.D255?, Newport Museum & Art Gallery  
 Champlieu, 14333, MAN St. Ger.  
 Charnay, 111, Feugère, M. 1977  
 Dunapentele, 16470, Landesmuseum Mainz  
 Grossprüfening (Umland Regensburg), Taf. 25 F1, Fischer, T. 1990  
 Bürgle bei Gundremmingen, Taf.7 4, Bersu, G. 1964  
 Hungary (arbitrary point) doubtful provenance, 21438, RGZM Mainz  
 Hungary (arbitrary point) doubtful provenance, 21448, RGZM Mainz  
 Iregenhausen nr Pfäffikon, Schweiz, Abb. 22, Meyer, E. 1969  
 Köln, afb.7, Van Buchem, H. 1970  
 Köln, 978, Römisch-Germanisches Museum  
 Lauriacum, 248, Jobst, W. 1975  
 Lauriacum, 252, Jobst, W. 1975  
 Lauriacum, 261, Jobst, W. 1975  
 Lauriacum, 285, Jobst, W. 1975  
 Mainz, R4128, Landesmuseum Mainz  
 Mainz, no inv no. MAN St. Ger  
 Neckenmarkt, VB Oberpullendorf, Abb. 745, Adler, H.ed. 1990  
 Oudenburg, plate XVI 7 grave 59, Mertens, J. & Van Impe, L. 1971



Oudenburg, plate XVII 1 grave 57, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXVII 1 grave 83, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIII 5 grave 103, Mertens, J. & Van Impe, L. 1971  
 St. Polten, 24, Scherrer, P. 1991  
 Thames arbitrary point, 86.3.23.1, British Museum  
 Trier, inv.30,285, Rheinisches Landesmuseum Trier  
 Trier, RD.65.135, RLT photos  
 Trier, RD.73.8 mid mid, RLT photos  
 Trier, RE.81.629/73, RLT photos  
 Trier, 26077, RGZM  
 Trier, S.T.3886b(156c), Cuppers, H. et al, 1984  
 Tulln, Österreich, grave 49. Abb.25, Mayr, U. & Winkler, K. 1991  
 Unterpetersdorf, VB Oberpullendorf, Abb. 568, Lackner, A. 1994  
 Virunum, Kärnten, Taf. 33 218, Gugl, C. 1995  
 Virunum, Kärnten, Taf. 33 220, Gugl, C. 1995

#### **Type 3/4 crossbow brooches with c1 bow decoration**

Augst, Taf. 38 2738, Riha, E. 1994  
 Bardouville, Aisne, p. 276, De Bouard, M. 1970  
 Kellmünz, Abb. 52 3, Mackensen, M. 1995  
 Keszthely-Dobogó, grave 52, Sagi, K. 1981  
 Krefeld-Gellep, grave 2832, Pirling, R. 1979  
 Krefeld-Gellep, grave 2872, Pirling, R. 1979  
 Lauriacum (Enns), 245, Jobst, W. 1975  
 Lauriacum (Enns), 275, Jobst, W. 1975  
 Nijmegen, 725, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
 Sagvar, grave 152 8, Burger, A. 1966  
 Sagvar, grave 174 1, Burger, A. 1966  
 Somogyzsil, grave 48 1, Burger, A. 1979  
 Somogyzsil, grave 60 2, Burger, A. 1979  
 Trier, RE. 80. 413/69, RLT photos

#### **Type 3/4 crossbow brooches with d0 bow decoration**

Augst, Taf. 55 1481, Riha, E. 1979  
 Augst, Taf. 56 1491, Riha, E. 1979  
 Burgheim, Taf. 16 1, Keller, E. 1971  
 Hungary (arbitrary point) doubtful provenance, 21403, RGZM  
 Keszthely-Dobogó, grave 55, Sagi, K. 1981  
 Krefeld-Gellep, Taf. 16 1 grave 3027, Pirling, R. 1989  
 Krefeld-Gellep, Taf. 9 14 grave 2971, Pirling, R. 1989  
 Oudenburg, plate XXXVIII 2 grave 114, Mertens, J. & Van Impe, L. 1971  
 Petronell (Carnuntum), Abb. 1054, Adler, H. ed. 1989



Somogyzsil, grave 19 1, Burger, A. 1979  
Somogyzsil, grave 5 1, Burger, A. 1979  
Tongeren, Loe10189, Musées Royaux d'Art et d'Histoire, Bruxelles  
Triesen, Liechtenstein, Taf. 39 1, Overbeck, B. 1982

**Type 3/4 crossbow brooches with d2 bow decoration**

Budapest (Aquincum), grave 92/1, Tópal, J. 1993  
Hungary (arbitrary point) doubtful provenance, 21436, RGZM  
Krefeld-Gellep, Taf. 3 10 grave 2911, Pirling, R. 1989  
London, 15083, Museum of London  
Nijmegen, Brk 1951/89, Steures, D.unpublished  
Oudenburg, plate V 1 grave 14, Mertens, J. & Van Impe, L. 1971  
Trier, inv. 38, 2142, Rheinisches Landesmuseum Trier  
Wessling, Taf. 38 14, Keller, E. 1971

**Type 3/4 crossbow brooches with e1 bow decoration**

Augst, Taf. 53 1467, Riha, E. 1979  
Azlburg, Straubing, Taf. 7 bottom L, Menghin, W. 1990  
Buda-Keszi, afb. 15, Van Buchem, H. 1973  
Chartres, sép. 766 C77. 7384. 1, Maison d'Archéologie, Chartres  
Kirchheim bei München, grave 7 Abb. 5 8, Keller, E. 1989  
Lauriacum (Enns), 258, Jobst, W. 1975  
Somogyzsil, grave 15 3, Burger, A. 1979  
Windisch, Taf. 29 4, Ettlinger, E. 1973

**Type 3/4 crossbow brooches with e6 bow decoration**

Augst, Taf. 37 2732, Riha, E. 1994  
Keszthely-Dobogó, grave 113, Sagi, K. 1981  
Lauriacum (Enns), 268, Jobst, W. 1975  
Lauriacum (Enns), 282, Jobst, W. 1975  
Lauriacum (Enns), 294, Jobst, W. 1975  
Lindau-Aeschach, Abb. 1, Overbeck, B. 1968  
Nijmegen, 718, Van Buchems, H. 1941 & GM Kam Museum, Nijmegen  
Podersdorf am see, VB Neusiedl am See, Abb. 764, Adler, H. 1990  
Salzburg-Klessheim, 1, Hell, M. 1943a  
Totis (Tátá), Abb. 1, Röder, F. 1930  
Wessling, Taf. 41 8, Keller, E. 1971

**Type 3/4 crossbow brooches with e9 bow decoration**

Aisne (arbitrary point), 54. 4(22545), Musée de Laon  
Augst, Taf. 54 1479, Riha, E. 1979  
Augst, Taf. 37 2735, Riha, E. 1994



Basel, grave 317, Degen, R. 1957  
 Keszthely-Dobogó, grave 79, Sagi, K. 1981  
 Lauriacum (Enns), 257, Jobst, W. 1975  
 Lauriacum (Enns), 271, Jobst, W. 1975  
 Lauriacum (Enns), 277, Jobst, W. 1975  
 Pécs, grave R212, Fülep, F. 1977  
 Sagvar, grave 331 4, Burger, A. 1966  
 Stadtbergen, Taf. 10 14, Keller, E. 1971

**Type 3/4 crossbow brooches with I1 bow decoration**

Brumath, Grafenburg, Alsace, fig. 26 A, Pétry, F. 1972  
 Buchendorf, Taf. 36 11, Keller, E. 1971  
 Chalon, 110, Feugère, M. 1977  
 Fôret de Compiègne, 28977(1/61), MAN St. Ger.  
 Dunapentele, 291, Landesmuseum Mainz  
 Krefeld-Gellep, grave 1216, Pirling, R. 1966  
 Krefeld-Gellep, grave 1493, Pirling, R. 1974  
 Krefeld-Gellep, grave 2896, Pirling, R. 1979  
 Lorenzberg bei Epfach, Taf. 39 33, Werner, J. 1969  
 Ringelsdorf, Abb. 1141, Adler, H.ed, 1990  
 Tongeren/Florenville, no inv., Musées Royaux d'Art et d'Histoire, Bruxelles  
 Trier, inv.06, 509, Rheinisches Landesmuseum Trier  
 Trier, inv. 10, 406, Rheinisches Landesmuseum Trier  
 Trier, inv. 28, 107, Rheinisches Landesmuseum Trier

**Type 3/4 crossbow brooches with I5 bow decoration**

Augst, Taf. 54 1472, Riha, E. 1979  
 Azlburg, Straubing, Abb.117, Prammer, J. 1989  
 Köln, 28,567, Römisch Germanisches Museum Köln  
 Nijmegen, E.IV.229, Van Buchems, H. 1941 & GM Kam Museum Nijmegen  
 Sagvar, gr.170 1, Burger, A. 1966  
 Schutzen am Gebirge, VB Eisenstadt, Abb. 642, Adler, H.ed. 1989  
 Tongeren, Sc.110.s.c.810, Gallo-Romeins Museum Tongeren  
 Trier, doubtful provenance, inv.05, 295a(156f), Cüppers, H.et al. 1984  
 Trier, doubtful provenance, inv.G1364(156e), Cüppers, H.et al. 1984  
 Tulln, Osterrisch, grave 10 Abb.13, Mayr, U. & Winkler, K. 1991

**Type 3/4 crossbow brooches with I9 bow decoration**

Altenstadt, Taf. 35 2, Keller, E. 1971  
 Augst, Taf. 53 1468, Riha, E. 1979



Augst, Taf. 53 1470, Riha, E. 1979  
 Dunapentele, grave 1141, Bóna, I. & Vágo, E. 1976  
 Hungary (arbitrary point) doubtful provenance, 21427, RGZM  
 Keszthely-Dobogó, grave 44, Sagi, K. 1981  
 Krefeld-Gellep, grave 2646, Pirling, R. 1979  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 2, Lindenschmidt, L. 1881  
 Mandeure, plate VII 162, Lerat, L. 1957  
 Pécs, grave R308, Fülep, F. 1977  
 Sagvar, grave 101 1, Burger, A. 1966  
 Sagvar, grave 15 1, Burger, A. 1966  
 Sagvar, grave 155 1, Burger, A. 1966  
 Sagvar, grave 233 14, Burger, A. 1966  
 Sagvar, grave 74 1, Burger, A. 1966  
 Stowting, fig. 10 29, Brailsford, J. 1951  
 Trier, RE. 85. 39/60, RLT photos  
 Vaduz, Taf. 40 1, Overbeck, B. 1982

#### **Type 3/4 crossbow brooches with j1 bow decoration**

Augst, Taf. 53 1469, Riha, E. 1979  
 Besançon, plate XIX 323, Lerat, L. 1956  
 Dunapentele, 16469, RGZM  
 Hungary (arbitrary point) doubtful provenance, 21419, RGZM  
 Krefeld-Gellep, grave 2885, Pirling, R. 1979  
 Krefeld-Gellep, Taf. 16 5 grave 3028, Pirling, R. 1989  
 Lauriacum (Enns), 291, Jobst, W. 1975  
 Münchhof, VB Neusiedl-am-See, Abb. 562, Adler, H.ed, 1992  
 Nijmegen, R.M.O.L.Vst 50, Van Buchems card index, GM Kam Museum, Nijmegen  
 Oudenburg, plate XXIV 2 grave 72, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXIV 3 grave 104, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R214, Fülep, F. 1977  
 Petronell (Carnuntum), Abb. 1106, Adler, H.ed. 1989  
 Seebruck, Taf. 44 7, Keller, E. 1971  
 Somogyzsil, grave 39 1, Burger, A. 1979  
 Trier, inv. 83, 89, Rheinisches Landesmuseum Trier

#### **Crossbow brooches of type 5i**

Augst, Taf. 38 2741, Riha, E. 1994  
 Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 531, Adler, H.ed. 1988  
 Barrington, Cambs. plate XXII 4, Fox, C. 1923  
 Basel, Abb. 41, Laur-Belart, R. 1959  
 Bataszek Kved Kom.Tolna, Abb. 132, Engemann, J. & Rüger, C. 1991  
 Bingen, Abb. 78, Behrens, G. 1920



Bonn, Taf. 23b, Horn, G. 1987  
 Bregenz, Taf. 10 167, Overbeck, B. 1982  
 St. Brice, Chartres, 1789, Musée des Beaux-Arts, Chartres  
 Chartres, sép. 738 C77. 7180. 1, Maison d'Archéologie, Chartres  
 Cheapside, 55. 8. 4. 27, British Museum  
 Colchester, 70. 4. 2. 25, British Museum  
 Dunapentele, XXXIV 7, Kovrig, I. 1937  
 Köln, N3478, Römisch-Germanisches Museum, Köln  
 Köln, N3479, Römisch-Germanisches Museum, Köln  
 Köln, Abb. 44 7, Carroll-Spillecke, M. 1993  
 Krefeld-Gellep, grave 1222, Pirling, R. 1966  
 Lauriacum (Enns), 297, Jobst, W. 1975  
 Lydney, 25, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Marteville, fig.86 Loizel, M. 1977  
 Meaux, p. 310, Landais & Giraud, 1984  
 Moosberg bei Murnau, Taf. 25 7, Garbsch, J. 1966  
 Paris, 71850, MAN St. Ger.  
 Rheinhessen (arbitrary point), 9602, RGZM  
 Sagvar, grave 114 1, Burger, A. 1966  
 Sagvar, grave 20 3, Burger, A. 1966  
 Sagvar, grave 253 1, Burger, A. 1966  
 Sagvar, grave 257 1, Burger, A. 1966  
 Sagvar, grave 310 2, Burger, A. 1966  
 Sagvar, grave 42 3, Burger, A. 1966  
 Sagvar, grave 97 1, Burger, A. 1966  
 Suffolk (arbitrary point), 506, Hattat, R. 1985  
 Tongeren, Loe10189, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, I/0252, Musée Curtius, Liège  
 Windisch, Abb. 3 grave 2, Hartmann, M. 1992  
 Windisch, Abb. 4 grave 4, Hartmann, M. 1992

#### **Crossbow brooches of type 5ii**

Abbeville-Homblières, 112 7, Böhme, H. 1974  
 Boulogne, p. 25 5, Seillier, C. 1983  
 Cirencester, Fiche BO2 12, Mackreth, D. 1982  
 Lankhills, Winchester, SF 278 grave 234, Clarke, G. 1976  
 Oudenburg, plate L 2 grave 152, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XLVI 1 grave 138, Mertens, J. & Van Impe, L. 1971  
 Sagvar grave 249 5, Burger, A. 1966 possibly type 5ii

#### **Crossbow brooches with niello inlaid elaborate bow and foot decoration**

Augst, Taf. 38 2741, Riha, E. 1994



Basel, Abb. 41, Laur-Belart, R. 1959  
 Bataszek Kved Kom.Tolna, Abb. 132, Engemann, J. & Rüger, C. 1991  
 Bingen, Abb. 78, Behrens, G. 1920  
 Bonn, Taf. 23b, Horn, G. 1987  
 Bregenz, Taf. 10 167, Overbeck, B. 1982  
 St. Brice, Chartres, 1789, Musée des Beaux-Arts, Chartres  
 Chartres, sép. 738 C77. 7180. 1, Maison d'Archéologie, Chartres  
 Cheapside, 55. 8. 4. 27, British Museum  
 Colchester, 70. 4. 2. 25, British Museum  
 Dunapentele, XXXIV 7, Kovrig, I. 1937  
 Hungary (arbitrary point) doubtful provenance, 21429, RGZM  
 Köln, N3478, Römisch-Germanisches Museum, Köln  
 Köln, N3479, Römisch-Germanisches Museum, Köln  
 Köln, Abb. 44 7, Carroll-Spillecke, M. 1993  
 Lauriacum (Enns), 297, Jobst, W. 1975  
 Lydney, 25, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 6, Lindenschmidt, L. 1881  
 Marteville, fig.86 Loizel, M. 1977  
 Meaux, p. 310, Landais & Giraud, 1984  
 Moosberg bei Murnau, Taf. 25 7, Garbsch, J. 1966  
 Paris, 71850, MAN St. Ger.  
 Sagvar, grave 114 1, Burger, A. 1966  
 Sagvar, grave 20 3, Burger, A. 1966  
 Sagvar, grave 253 1, Burger, A. 1966  
 Sagvar, grave 257 1, Burger, A. 1966  
 Tongeren, I/0252, Musée Curtius, Liège  
 Windisch, Abb. 3 grave 2, Hartmann, M. 1992  
 Windisch, Abb. 4 grave 4, Hartmann, M. 1992

### **Crossbow brooches of type 6I**

Augst, Taf. 55 1485, Riha, E. 1979  
 Augst, Taf. 56 1489, Riha, E. 1979  
 Augst, Taf. 56 1493, Riha, E. 1979  
 Augst, Taf. 56 1494, Riha, E. 1979  
 Augst, Taf. 38 2740, Riha, E. 1994  
 Basel, grave 306, Degen, R. 1957  
 Bury St. Edmunds, 1269, Hattatt, R. 1987  
 Caernarfon (Segontium), fig. 10 1, Allason-Jones, L. 1993  
 Hungary (arbitrary point) doubtful provenance, 21446, RGZM  
 Lauriacum (Enns), 296, Jobst, W. 1975  
 Lyon prov. locale, 540, Boucher, S. Perdu, G. & Feugère. 1980  
 Lyon prov. locale, 541, Boucher, S. Perdu, G. & Feugère. 1980



Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 6, Lindenschmidt, L. 1881  
Meaux, p. 199 bottom, Landais & Giraud, 1984  
St. Marcel, Paris, AM 755/1, Musée Carnavalet, 1985  
Trier, afb. 41, Van Buchem, H. 1966  
Wiesbaden, 443, RGZM, illustrated in inventory book

Lyon prov. locale, 542, Boucher, S. Perdu, G. & Feugère. 1980 probably type 6i

### **Crossbow brooches of type 6ii**

Augst, Taf. 56 1496, Riha, E. 1979  
Augst, Taf. 56 1497, Riha, E. 1979  
Chartres, sép. 625 C77. 6362. 1, Maison d'Archéologie, Chartres  
Cortrat, dep. Loiret, Taf. 120, Böhme, H. 1974  
Dunapentele, grave 927, Bóna, I. & Vágo, E. 1976  
Eining, Taf. 4, Fischer, T. 1988  
St. Martin-de-Fontenay, Calvados, plate 117 c2, Pilet, C. 1994  
Icklingham, 507, Hattat, R. 1985  
Illzach, plate 45 5 no inv, Musée Historique de Mulhouse  
London, MSL87(593)(327), Museum of London  
Maastricht, MAVP16-18. 1/50A, Sectie Archeologie Gemeente Maastricht  
Mainz, Abb. 13, Mötefindt, H. 1916  
Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 5, Lindenschmidt, L. 1881  
Metz, 267 I, Cüppers, H. et al, 1983  
Monceau-le-Neuf, Aisne, Taf. 129, Böhme, H. 1974  
Oudenburg, plate XL 7 grave 111, Mertens, J. & Van Impe, L. 1971  
Oudenburg, plate XXXVII 3 grave 124, Mertens, J. & Van Impe, L. 1971  
Richborough, 19 [324(7351227)], Bushe-Foxe, J. 1928 [& Bayley et al forthcoming]  
Sagvar, grave 306 3, Burger, A. 1966  
Tokod, grave 100, Mócsy, A. 1981  
Tokod, grave 48, Mócsy, A. 1981  
Trier, inv. 11, 943, Rheinisches Landesmuseum Trier  
Vieil-Atre, Boulogne, p. 25 6, Seillier, C. 1983  
Windisch, Abb. 17, Mötefindt, H. 1916

### **Crossbow brooches of type 5-6 (incomplete or hybrids)**

Augst, Taf. 56 1495, Riha, E. 1979  
Chichester, fig. 5.14 2, Down, A. & Rule, M. 1971  
Corbridge, fig. 10 83, Snape, M. 1993  
Hungary (arbitrary point) doubtful provenance, 21402, RGZM  
Dunapentele, gr. 131, Bóna, I. & Vágo, E. 1976  
Köln, 978, Römisch Germanisches Museum Köln  
Köln, N3480, Römisch Germanisches Museum Köln



Rhineland (arbitrary point), KL 652, Römisch Germanisches Museum Köln  
 Krefeld-Gellep, Taf.17 1 gr. 3031, Pirling, R. 1989  
 Lankhills, Winchester, SF 447 gr. 322, Clarke, G. 1976  
 Lankhills, Winchester, SF 587, Clarke, G. 1976  
 Lauriacum (Enns), 298, Jobst, W. 1975  
 Lauriacum (Enns), 300, Jobst, W. 1975  
 Lauriacum (Enns), Abb.62 R, Schicker, J. 1933  
 Lydney, 23, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Lydney, 24, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Momalle, région Liège, I/0735, Musée Curtius, Liège  
 Pécs, gr.R190, Fülep, F. 1977  
 Richborough, 333(7351919), unpublished Bayley/forthcoming  
 Schaanwald, Liechtenstein, Abb.6.3, Kellner, H. 1964  
 Studland, Dorset, fig. 54 105, Hattatt, R. 1982

#### **Crossbow brooches with filigree trim (mostly types 5 and 6)**

Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 531, Adler, H.ed. 1988  
 Köln, N3479, Römisch-Germanisches Museum, Köln  
 Krefeld-Gellep, grave 1222, Pirling, R. 1966  
 Maastricht, MAVP16-18. 1/50A, Sectie Archeologie Gemeente Maastricht  
 Sagvar, grave 114 1, Burger, A. 1966  
 Sagvar, grave 310 2, Burger, A. 1966  
 Seitenstetten, in Neder-Oostenrijk, afb. 2, Van Buchem, H. 1973  
 Trier, afb. 41, Van Buchem, H. 1966  
 Windisch, Abb. 3 grave 2, Hartmann, M. 1992  
 Windisch, Abb. 4 grave 4, Hartmann, M. 1992

#### **Crossbow brooches of types 5 and 6 with c1 foot**

Abbeville-Homblières, 112 7, Böhme, H. 1974  
 Augst, Taf. 56 1489, Riha, E. 1979  
 Augst, Taf. 56 1493, Riha, E. 1979  
 Augst, Taf. 56 1494, Riha, E. 1979  
 Augst, Taf. 38 2740, Riha, E. 1994  
 Barrington, Cambs. plate XXII 4, Fox, C. 1923  
 Basel, Abb. 41, Laur-Belart, R. 1959  
 Basel, grave 306, Degen, R. 1957  
 Bonn, Taf. 23b, Horn, G. 1987  
 Boulogne, p. 25 5, Seillier, C. 1983  
 Bregenz, Taf. 10 167, Overbeck, B. 1982  
 St. Brice, Chartres, 1789, Musée des Beaux-Arts, Chartres  
 Bury St. Edmunds, 1269, Hattatt, R. 1987  
 Chartres, sép. 738 C77. 7180. 1, Maison d'Archéologie, Chartres



Cirencester, Fiche BO2 12, Mackreth, D. 1982  
 Colchester, 70. 4. 2. 25, British Museum  
 Dunapentele, XXXIV 7, Kovrig, I. 1937  
 Hungary (arbitrary point) doubtful provenance, 21446, RGZM  
 Köln, N3478, Römisch-Germanisches Museum, Köln  
 Köln, N3479, Römisch-Germanisches Museum, Köln  
 Lankhills, Winchester, SF 278 grave 234, Clarke, G. 1976  
 Lauriacum (Enns), 296, Jobst, W. 1975  
 Lauriacum (Enns), 297, Jobst, W. 1975  
 Lyon prov. locale, 540, Boucher, S. Perdu, G. & Feugère. 1980  
 Lyon prov. locale, 541, Boucher, S. Perdu, G. & Feugère. 1980  
 Lyon prov. locale, 542, Boucher, S. Perdu, G. & Feugère. 1980  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 6, Lindenschmidt, L. 1881  
 Marteville, fig. 86, Loizel, M. 1977  
 Meaux, p. 310, Landais & Giraud, 1984  
 Momalle, région Liège, I/0735, Musée Curtius, Liège  
 Pécs, grave R190, Fülep, F. 1977  
 Rhineland (arbitrary point), KL 652, Römisch Germanisches Museum Köln  
 Rheinhessen (arbitrary point), 9602, RGZM  
 Sagvar, grave 114 1, Burger, A. 1966  
 Sagvar, grave 20 3, Burger, A. 1966  
 Sagvar, grave 249 5, Burger, A. 1966  
 Sagvar, grave 253 1, Burger, A. 1966  
 Sagvar, grave 257 1, Burger, A. 1966  
 Sagvar, grave 310 2, Burger, A. 1966  
 Sagvar, grave 97 1, Burger, A. 1966  
 Tongeren, I/0252, Musée Curtius, Liège  
 Windisch, Abb. 3 grave 2, Hartmann, M. 1992  
 Windisch, Abb. 4 grave 4, Hartmann, M. 1992

#### **Type 5 and 6 crossbow brooches with c4 foot**

Augst, Taf. 56 1496, Riha, E. 1979  
 Augst, Taf. 56 1497, Riha, E. 1979  
 Bingen, Abb. 78, Behrens, G. 1920  
 Chartres, sép. 625 C77. 6362. 1, Maison d'Archéologie, Chartres  
 Cheapside, 55. 8. 4. 27, British Museum  
 Cortrat, Taf. 120, Böhme, H. 1974  
 Dunapentele, grave 927, Bóna, I. & Vágo, E. 1976  
 Eining, Taf. 4, Fischer, T. 1988  
 St. Martin-de-Fontenay, Calvados, plate 117 c2, Pilet, C. 1994  
 Icklingham, 507, Hattat, R. 1985  
 Köln, 978, Römisch-Germanisches Museum, Köln



Krefeld-Gellep, Taf. 17 1 grave 3031, Pirling, R. 1989  
 Lankhills, Winchester, SF 447 grave 322, Clarke, G. 1976  
 Lankhills, Winchester, SF 587, Clarke, G. 1976  
 Lauriacum (Enns), 300, Jobst, W. 1975  
 Lauriacum (Enns), Abb. 62 R, Schicker, J. 1933  
 London, MSL87(593)(327), Museum of London  
 Mainz, Abb. 13, Mötefindt, H. 1916  
 Area of Mainz (arbitrary point) doubtful provenance, Taf. 4 5, Lindenschmidt, L. 1881  
 Metz, 267 I, Cüppers, H. et al, 1983  
 Monceau-le-Neuf, Aisne, Taf.129, Böhme, H. 1974  
 Oudenburg, plate XL 7 grave 111, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate XXXVII 3 grave 124, Mertens, J. & Van Impe, L. 1971  
 Richborough, 19 [324(7351227)], Bushe-Foxe, J. 1928 [& Bayley et al forthcoming]  
 Sagvar, grave 42 3, Burger, A. 1966  
 Sagvar, grave 306 3, Burger, A. 1966  
 Tokod, grave 100, Mócsy, A. 1981  
 Tokod, grave 48, Mócsy, A. 1981  
 Vieil-Atre, Boulogne, p. 25 6, Seillier, C. 1983  
 Windisch, Abb. 17, Mötefindt, H. 1916

#### GLASS BEADS:ONE COLOUR BEADS

All one colour beads except heart shaped beads are only those from datable 4th & 5th century contexts.

#### Short blue biconical beads

St. Albans, 17 &18, Frere, S. 1972  
 Augst, 2876, Riha, E. 1990  
 Augst, 2925, Riha, E. 1990  
 Augst, 2931, Riha, E. 1990  
 Augst, 2934, Riha, E. 1990  
 Aulnizeux, grave 604 t114 8, Böhme, H. 1974  
 Aulnay-sur-Marne, pl.VI F, Brisson, A. et al, 1967  
 Basel, grave 300, Degen, R. 1957  
 Brény, Aisne (approx pt in Aisne), t. 1552, MAN St. Ger.  
 Brunn am Gebirge, grave 7, 1c, Farka, C. 1976  
 Burgheim, grave 5/1960 9, Keller, E. 1971  
 Champdolent, St. Germain-les-Corbeil, 12. 580, MAN St. Ger.  
 Chartres, sép. 773.C77. 7226. 4, Maison d'Archéologie, Chartres  
 Chartres, sép. 773.C77. 7381. 2, Maison d'Archéologie, Chartres  
 Chartres, C73. 4224->, Maison d'Archéologie, Chartres  
 Chouy, Aisne, pl. 36. 6(3)n.s, Moreau, F. 1884  
 Dunapentele, grave 167, Bóna, I. & Vágo, E. 1976



Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976  
 Dunapentele, 103, Alföldi, M. 1957  
 Fôret de Compiègne, 29. 125a, MAN St. Ger.  
 Fôret de Compiègne, 29. 125b, MAN St. Ger.  
 St. Martin-de-Fontenay, Calvados, grave 191 3 4, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 282 5 5, Pilet, C. 1994  
 Frénouville, grave 317, Pilet, C. 1980  
 Frénouville, grave 393, Pilet, C. 1980  
 Frénouville, grave 418, Pilet, C. 1980  
 Girm, VB Oberpullensdorf, grave 12 3c, Braun, T. 1991/2  
 Gross-Gerau, grave 401 Abb.1 10, Jährling, W. 1985  
 Isny, Kr. Ravensburg, kette 5, Garbsch, J. 1971  
 Keszthely-Dobogó, grave 108, Sagi, K. 1981  
 Keszthely-Dobogó, grave 110, Sagi, K. 1981  
 Keszthely-Dobogó, grave 19, Sagi, K. 1981  
 Keszthely-Dobogó, grave 62, Sagi, K. 1981  
 Keszthely-Dobogó, grave 62, Sagi, K. 1981  
 Keszthely-Dobogó, grave 64, Sagi, K. 1981  
 Keszthely-Dobogó, grave 74, Sagi, K. 1981  
 Kirchheim bei München, grave 2 Abb.4 13, Keller, E. 1989  
 Köln, grave 134a, Friedhoff, U. 1991  
 Krefeld-Gellep, grave 1231 9a-f, Pirling, R. 1966  
 Krefeld-Gellep, grave 240 21b & c, Pirling, R. 1966  
 Krefeld-Gellep, grave 1279 d, Pirling, R. 1974  
 Krefeld-Gellep, grave 1822 3e, Pirling, R. 1974  
 Krefeld-Gellep, grave 1849 10e, Pirling, R. 1974  
 Krefeld-Gellep, grave 2826 10f, Pirling, R. 1979  
 Krefeld-Gellep, grave 2887 11d, Pirling, R. 1979  
 Krefeld-Gellep, grave 2917 4abc, Pirling, R. 1989  
 Krefeld-Gellep, grave 2932 bfh, Pirling, R. 1989  
 Krefeld-Gellep, grave 2972 8a, Pirling, R. 1989  
 Krefeld-Gellep, grave 2978 e, Pirling, R. 1989  
 Krefeld-Gellep, grave 2982 bc, Pirling, R. 1989  
 Krefeld-Gellep, grave 2983 cd, Pirling, R. 1989  
 Krefeld-Gellep, grave 2984 e, Pirling, R. 1989  
 Krefeld-Gellep, grave 2985 efg, Pirling, R. 1989  
 Krefeld-Gellep, grave 3005 a-f, Pirling, R. 1989  
 Krefeld-Gellep, grave 3007 de, Pirling, R. 1989  
 Krefeld-Gellep, grave 3008 fg, Pirling, R. 1989  
 Künzing, Taf. 44. Fischer, T. 1988  
 Lankhills, Winchester, SF 182, Clarke, G. 1976  
 Lankhills, Winchester, SF 192, Clarke, G. 1976



Lankhills, Winchester, SF 215, Clarke, G. 1976  
 Lankhills, Winchester, SF 248, Clarke, G. 1976  
 Lankhills, Winchester, SF 28 grave 40, Clarke, G. 1976  
 Lankhills, Winchester, SF 353 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 425, Clarke, G. 1976  
 Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 85, Clarke, G. 1976  
 Linz, 1994. 94f, Ruprechtsberger, E. 1996  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Lisieux, sép. 97, Service d'Archéologie, Calvados  
 Lisieux, sép. 921, Service d'Archéologie, Calvados  
 Matagne-la-Grande, 46g, Rober, R. 1983  
 Mautern an der Donau, grave 1 Abb.53, Thaller, H. 1950  
 Mautern an der Donau, grave 9 Abb. 53, Thaller, H. 1950  
 München, grave 5 6, Keller, E. 1971  
 München, grave 11 8, Keller, E. 1971  
 Nijmegen, Brk1951/142, Steures, D.unpublished  
 Oudenburg, grave 191 cat.no. 6c, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, grave 194 cat.no. 5, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R244 1, Fülep, F. 1977  
 Potzham, grave 4 10, Keller, E. 1971  
 Sagvar, grave 178, Burger, A. 1966  
 Sagvar, grave 185, Burger, A. 1966  
 Sagvar, grave 197, Burger, A. 1966  
 Sagvar, grave 254, Burger, A. 1966  
 Sagvar, grave 283, Burger, A. 1966  
 Sagvar, grave 302, Burger, A. 1966  
 Sagvar, grave 306, Burger, A. 1966  
 Sagvar, grave 332, Burger, A. 1966  
 Sagvar, grave 342, Burger, A. 1966  
 Stein-am-Rhein, Taf. 45 grave 24 7, Höneisen, M.ed. 1993  
 Tokod, grave 4, Mócsy, A. 1981  
 Tongeren, grave 111 15e, Vanvinckenroye, W. 1984  
 Tongeren, grave 164 4a, Vanvinckenroye, W. 1984  
 Tongeren, grave 196 4, Vanvinckenroye, W. 1984  
 Tongeren, grave 200 2b, Vanvinckenroye, W. 1984  
 Tongeren, grave 37 3c, Vanvinckenroye, W. 1984  
 Tongeren, grave 50 6b, Vanvinckenroye, W. 1984  
 Tongeren, grave 69 7c, Vanvinckenroye, W. 1984  
 Tongeren, grave 71 g, Vanvinckenroye, W. 1984  
 Tongeren, grave 96 17b, Vanvinckenroye, W. 1984  
 Uley, fiche 1:B1 1148, Woodward, A. & Leach, P. 1993



Uley, fiche 1:B2 1565, Woodward, A. & Leach, P. 1993  
Uley, fiche 1:B2 4937, Woodward, A. & Leach, P. 1993  
Uley, fiche 1:B1 7543, Woodward, A. & Leach, P. 1993  
Uley, fiche 1:B2 790, 8008, Woodward, A. & Leach, P. 1993  
Valley, Taf. 21 6, Keller, E. 1971

**Short green biconical beads**

Augst, 2808, Riha, E. 1990  
Augst, 2876, Riha, E. 1990  
Augst, 2925, Riha, E. 1990  
Brény, Aisne (approx pt in Aisne), t. 1552, MAN St. Ger.  
Brunn am Gebirge, grave 7, 1d, Farka, C. 1976  
Fôret de Compiègne, 29. 125b, MAN St. Ger.  
Dunapentele, grave 1134, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1150, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1160, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1236, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1304, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976  
Dunapentele, 12, Alföldi, M. 1957  
Frénouville, grave 317, Pilet, C. 1980  
Frénouville, grave 418, Pilet, C. 1980  
Keszthely-Dobogó, grave 10, Sagi, K. 1981  
Keszthely-Dobogó, grave 58, Sagi, K. 1981  
Keszthely-Dobogó, grave 74, Sagi, K. 1981  
Krefeld-Gellep, grave 1123 4a-b, Pirling, R. 1966  
Krefeld-Gellep, grave 1574 7d, Pirling, R. 1974  
Krefeld-Gellep, grave 2972 8c, Pirling, R. 1989  
Krefeld-Gellep, grave 2978 f, Pirling, R. 1989  
Krefeld-Gellep, grave 2983 ab, Pirling, R. 1989  
Krefeld-Gellep, grave 3008 11, Pirling, R. 1989  
Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976  
Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976  
Lankhills, Winchester, SF 583, Clarke, G. 1976  
Matagne-la-Grande, 46g, Rober, R. 1983  
Matagne-la-Grande, 46g, Rober, R. 1983  
München, grave 5 6, Keller, E. 1971  
München, grave 11 8, Keller, E. 1971  
Oudenburg, grave 191 cat.no. 6d, Mertens, J. & Van Impe, L. 1971  
Sagvar, grave 188, Burger, A. 1966  
Sagvar, grave 197, Burger, A. 1966  
Sagvar, grave 252, Burger, A. 1966



Sagvar, grave 283, Burger, A. 1966  
 Sagvar, grave 294, Burger, A. 1966  
 Sagvar, grave 296, Burger, A. 1966  
 Sagvar, grave 305, Burger, A. 1966  
 Sagvar, grave 315, Burger, A. 1966  
 Sagvar, grave 325, Burger, A. 1966  
 Sagvar, grave 340, Burger, A. 1966  
 Sagvar, grave 342, Burger, A. 1966  
 Sagvar, grave 40, Burger, A. 1966  
 Tokod, grave 18, Mócsy, A. 1981  
 Tokod, grave 4, Mócsy, A. 1981  
 Tokod, grave 77, Mócsy, A. 1981  
 Tokod, grave 97A, Mócsy, A. 1981  
 Tokod, grave 97B, Mócsy, A. 1981  
 Tongeren, grave 200 b, Vanvinckenroye, W. 1984  
 Tongeren, grave 37 3j, Vanvinckenroye, W. 1984  
 Tongeren, pl.VII. 32.g.c, Vanvinckenroye, W. 1995  
 Uley, fiche 1:B1 1472, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B1 1526, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B1 2186, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B2 4875, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B1 7372, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 15, Woodward, A. & Leach, P. 1993  
 Valley, Taf. 21 8, Keller, E. 1971  
 Wessling, grave 18 12, Keller, E. 1971  
 Windisch, grave 1, Hartmann, M. 1992

#### **Short yellow biconical beads**

Augst, 2934, Riha, E. 1990  
 Brunn am Gebirge, grave 7, 1a, Farka, C. 1976  
 Burgheim, grave 22/1953, Keller, E. 1971  
 Chartres, C77. 6312. 6-12, Maison d'Archéologie, Chartres  
 Forêt de Compiègne, 29. 125a, MAN St. Ger.  
 Dunapentele, grave 165, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 458, Bóna, I. & Vágo, E. 1976  
 Keszthely-Dobogó, grave 19, Sagi, K. 1981  
 Kirchheim bei München, grave 2 Abb.4 8, Keller, E. 1989  
 Krefeld-Gellep, grave 1279 e, Pirling, R. 1974  
 Krefeld-Gellep, grave 1849 10d, Pirling, R. 1974  
 Krefeld-Gellep, grave 2972 8b, Pirling, R. 1989  
 Krefeld-Gellep, grave 2983 e, Pirling, R. 1989  
 Lankhills, Winchester, SF 182, Clarke, G. 1976



Lankhills, Winchester, SF 192, Clarke, G. 1976  
 Lankhills, Winchester, SF 248, Clarke, G. 1976  
 Lankhills, Winchester, SF 28 grave 40, Clarke, G. 1976  
 Lankhills, Winchester, SF 425, Clarke, G. 1976  
 Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 85, Clarke, G. 1976  
 Linz, 1994. 94f, Ruprechtsberger, E. 1996  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Lisieux, sép. 97, Service d'Archéologie, Calvados  
 Lisieux, sép. 921, Service d'Archéologie, Calvados  
 Sagvar, grave 113, Burger, A. 1966  
 Tongeren, grave 240 1e, Vanvinckenroye, W. 1984  
 Uley, fiche 1:B1 1461, Woodward, A. & Leach, P. 1993  
 Valley, Taf. 21 8, Keller, E. 1971

### **Blue spherical beads**

St. Albans, fig. 47 h,i, Wheeler, R. & Wheeler, T. 1936  
 Augst, 2925, Riha, E. 1990  
 Augst, 2934, Riha, E. 1990  
 Brunn am Gebirge, grave 16, 1b, Farka, C. 1976  
 Brunn am Gebirge, grave 7, 1b, Farka, C. 1976  
 Burgheim, grave 22/1953, Keller, E. 1971  
 Chartres, sép. 773.C77. 7381. 2(3, Maison d'Archéologie, Chartres  
 Dunstable, fig. 28 7, Matthews, C. 1981  
 Dunapentele, grave 167, Bóna, I. & Vágo, E. 1976  
 Isny, Kr. Ravensburg, kette 5, Garbsch, J. 1971  
 Keszthely-Dobogó, grave 10, Sagi, K. 1981  
 Keszthely-Dobogó, grave 19, Sagi, K. 1981  
 Keszthely-Dobogó, grave 83, Sagi, K. 1981  
 Kirchheim bei München, grave 2 Abb.4 15b, Keller, E. 1989  
 Kirchheim bei München, grave 5 Abb.5 3, Keller, E. 1989  
 Köln, grave 134a, Friedhoff, U. 1991  
 Krefeld-Gellep, grave 1574 7e, Pirling, R. 1974  
 Krefeld-Gellep, grave 2826 10b, Pirling, R. 1979  
 Krefeld-Gellep, grave 2917 4d, Pirling, R. 1989  
 Krefeld-Gellep, grave 2978 g, Pirling, R. 1989  
 Krefeld-Gellep, grave 2987 e, Pirling, R. 1989  
 Lankhills, Winchester, SF 215, Clarke, G. 1976  
 Lankhills, Winchester, SF 248, Clarke, G. 1976  
 Lankhills, Winchester, SF 353 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 425, Clarke, G. 1976  
 Lankhills, Winchester, SF 85, Clarke, G. 1976



Lauriacum (Enns), grave 43 1, Vetters, H. & Karnitsch, P. et al, 1960  
 Leicester, fig. 92 5, Kenyon, K. 1948  
 Linz, 1994. 94f, Ruprechtsberger, E. 1996  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Oudenburg, grave 191 cat.no. 6a, Mertens, J. & Van Impe, L. 1971  
 Poundbury, fig. 72 2, Farwell, D. & Molleson, T. 1993  
 Poundbury, fig. 72 7, Farwell, D. & Molleson, T. 1993  
 Sagvar, grave 131, Burger, A. 1966  
 Sagvar, grave 169, Burger, A. 1966  
 Sagvar, grave 178, Burger, A. 1966  
 Sagvar, grave 264, Burger, A. 1966  
 Sagvar, grave 286, Burger, A. 1966  
 Sagvar, grave 306, Burger, A. 1966  
 Sagvar, grave 315, Burger, A. 1966  
 Sagvar, grave 328, Burger, A. 1966  
 Sagvar, grave 332, Burger, A. 1966  
 Vermand doubtful provenance, 84953, MAN St. Ger.

#### **Green spherical beads**

Bónaduz Switz. Lower Rhine, grave 575t15 14, Schneider-Schnekenburger, G. 1980  
 Bónaduz Switz. Lower Rhine, grave 627t. 16. 4, Schneider-Schnekenburger, G. 1980  
 Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976  
 Dunapentele, p446 no. 17, Alföldi, M. 1957  
 Krefeld-Gellep, grave 1279 b, Pirling, R. 1974  
 Krefeld-Gellep, grave 2990, Pirling, R. 1989  
 Lankhills, Winchester, SF 182, Clarke, G. 1976  
 Lankhills, Winchester, SF 424 grave 326, Clarke, G. 1976  
 Lankhills, Winchester, SF 425, Clarke, G. 1976  
 Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 85, Clarke, G. 1976  
 Lisieux, sép. 921, Service d'Archéologie, Calvados  
 Poundbury, fig. 72 7, Farwell, D. & Molleson, T. 1993  
 Sagvar, grave 120, Burger, A. 1966  
 Sagvar, grave 149, Burger, A. 1966  
 Sagvar, grave 222, Burger, A. 1966  
 Sagvar, grave 251, Burger, A. 1966  
 Sagvar, grave 264, Burger, A. 1966  
 Sagvar, grave 328, Burger, A. 1966  
 Uley, fig. 126 25, Woodward, A. & Leach, P. 1993  
 St. Albans, 362, Frere, S. 1984  
 Wessling, grave 18 12, Keller, E. 1971



### **Yellow spherical beads**

Augst, 2898, Riha, E. 1990  
Bónaduz Switz. Lower Rhine, grave 603t. 16 7, Schneider-Schnekenburger, G. 1980  
Bónaduz Switz. Lower Rhine, grave 627t. 16. 4, Schneider-Schnekenburger, G. 1980  
Canterbury, 1360, Blockley, K. et al, 1995  
Chartres, C77. 6312. 6-12, Maison d'Archéologie, Chartres  
Keszthely-Dobogó, grave 47, Sagi, K. 1981  
Kirchheim bei München, grave 2 Abb.4 10, Keller, E. 1989  
Krefeld-Gellep, grave 1043 13, Pirling, R. 1966  
Krefeld-Gellep, grave 2887, Pirling, R. 1979  
Lankhills, Winchester, SF 182, Clarke, G. 1976  
Lankhills, Winchester, SF 215, Clarke, G. 1976  
Lankhills, Winchester, SF 85, Clarke, G. 1976  
Sagvar, grave 332, Burger, A. 1966  
Uley, fiche 1:B1 8310, Woodward, A. & Leach, P. 1993

### **Blue cylinder beads**

St. Albans, fig. 47 e & j Wheeler, R. & Wheeler, T. 1936  
Altenstadt, grave 8 4, Keller, E. 1971  
Altenstadt, grave 9 10, Keller, E. 1971  
Villa d'Ancy, (Limé), Aisne, t. 1167, MAN St. Ger.  
Augst, 2890, Riha, E. 1990  
Bónaduz Switz. Lower Rhine, grave 397t13 10, Schneider-Schnekenburger, G. 1980  
Bónaduz Switz. Lower Rhine, grave 627t. 16 4, Schneider-Schnekenburger, G. 1980  
Brény, Aisne (approx pt in Aisne), t. 1552(6), MAN St. Ger.  
Brunn am Gebirge, grave 16, 1f, Farka, C. 1976  
Brunn am Gebirge, grave 17, 3a, Farka, C. 1976  
Budapest (Aquincum), grave 143d, Tópal, J. 1993  
Chartres, C77. 6312. 6-12, Maison d'Archéologie, Chartres  
Chartres, C77. 6312. 6-12, Maison d'Archéologie, Chartres  
Chartres, sép. 723 C77. 7088. 2, Maison d'Archéologie, Chartres  
Chouy, Aisne, pl. 36. 6(1)n.s, Moreau, F. 1884  
Dunapentele, grave 1041, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1049, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1078, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1236, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1275, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 165, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 167, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 458, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 82, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 963, Bóna, I. & Vágo, E. 1976



Dunapentele, 108, Alföldi, M. 1957  
 Dunapentele, 122, Alföldi, M. 1957  
 Dunapentele, 129, Alföldi, M. 1957  
 Dunapentele, 6, Alföldi, M. 1957  
 Dunapentele, 8, Alföldi, M. 1957  
 Dunapentele, 93, Alföldi, M. 1957  
 Dunapentele, 94, Alföldi, M. 1957  
 Exeter, fig. 96 74, Holbrook, N. & Bidwell, P. 1991  
 St. Martin-de-Fontenay, Calvados, grave 191 3 1268, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 282 5 12, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 385 3, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 63 5-6, Pilet, C. 1994  
 Girm, VB Oberpullensdorf, grave 13 3a, Braun, T. 1991/2  
 Isny, Kr. Ravensburg, kette 4, Garbsch, J. 1971  
 Keszthely-Dobogó, grave 19, Sagi, K. 1981  
 Keszthely-Dobogó, grave 32, Sagi, K. 1981  
 Keszthely-Dobogó, grave 58, Sagi, K. 1981  
 Keszthely-Dobogó, grave 83, Sagi, K. 1981  
 Kirchheim bei München, grave 2 Abb.4 16, Keller, E. 1989  
 Kirchheim bei München, grave 5 Abb.5 3, Keller, E. 1989  
 Köln, grave 134a, Friedhoff, U. 1991  
 Krefeld-Gellep, grave 1231 9l-n, Pirling, R. 1966  
 Krefeld-Gellep, grave 480 10, Pirling, R. 1966  
 Krefeld-Gellep, grave 1574 7b, Pirling, R. 1974  
 Krefeld-Gellep, grave 1833 8, Pirling, R. 1974  
 Krefeld-Gellep, grave 1849 10a, Pirling, R. 1974  
 Krefeld-Gellep, grave 2794 i, Pirling, R. 1979  
 Krefeld-Gellep, grave 2826 10a & c, Pirling, R. 1979  
 Krefeld-Gellep, grave 2917 4e, Pirling, R. 1989  
 Krefeld-Gellep, grave 2932 d, Pirling, R. 1989  
 Krefeld-Gellep, grave 2984 b, Pirling, R. 1989  
 Krefeld-Gellep, grave 3007 a-c, Pirling, R. 1989  
 Krefeld-Gellep, grave 3008, Pirling, R. 1989  
 Künzing, Taf. 44 bottom, Fischer, T. 1988  
 Lankhills, Winchester, SF 182, Clarke, G. 1976  
 Lankhills, Winchester, SF 215, Clarke, G. 1976  
 Lankhills, Winchester, SF 248, Clarke, G. 1976  
 Lankhills, Winchester, SF 315 grave 333, Clarke, G. 1976  
 Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 399 grave 351, Clarke, G. 1976  
 Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976  
 Lauriacum (Enns), Abb. 65, Schicker, J. 1933



Lauriacum (Enns), Abb. 65, Schicker, J. 1933  
 Lauriacum (Enns), grave 74 2, Vetters, H. & Karnitsch, P. et al, 1960  
 Lauriacum (Enns), grave 74 3, Vetters, H. & Karnitsch, P. et al, 1960  
 Lauriacum (Enns), grave 74 6, Vetters, H. & Karnitsch, P. et al, 1960  
 Lisieux, sép. 370, Service d'Archéologie, Calvados  
 Lydney, fig. 104, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 München, grave 5 6, Keller, E. 1971  
 Neuburg an der Donau, grave 13 , Keller, E. 1979  
 Nijmegen, LN60-61/246, Steures, D.unpublished  
 Nijmegen, Ma1963/59, Steures, D.unpublished  
 Oudenburg, grave 194 cat.no. 5, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R193, Fülep, F. 1977  
 Richborough, plate LV 235, Bushe-Foxe, J. 1949  
 Richborough, plate LV 255, Bushe-Foxe, J. 1949  
 Sagvar, grave 120, Burger, A. 1966  
 Sagvar, grave 201, Burger, A. 1966  
 Sagvar, grave 252, Burger, A. 1966  
 Sagvar, grave 302, Burger, A. 1966  
 Sagvar, grave 306, Burger, A. 1966  
 Sagvar, grave 32, Burger, A. 1966  
 Shakenoak, 249, Brodribb, A.et al, 1973  
 Shakenoak, 250, Brodribb, A.et al, 1973  
 Shakenoak, 297, Brodribb, A.et al, 1978  
 Tournai, CRP 71/3, Brulet, R. & Coulon, G. 1977  
 Tournai, CRP145/2, Brulet, R. & Coulon, G. 1977  
 Tokod, grave 97A, Mócsy, A. 1981  
 Tongeren, grave 200 2a & c, Vanvinckenroye, W. 1984  
 Tongeren, grave 240 1a, Vanvinckenroye, W. 1984  
 Tongeren, grave 37 3a & k, Vanvinckenroye, W. 1984  
 Tongeren, grave 69 7d, Vanvinckenroye, W. 1984  
 Tongeren, pl.VII. 32.g.d, Vanvinckenroye, W. 1995  
 Trier, Abb. 4. 32, Loeschcke, S. 1925  
 Trier, Abb. 4. 35, Loeschcke, S. 1925  
 Wessling, grave 7 6, Keller, E. 1971

#### **Green cylinder beads**

St. Albans, fig. 47 c, Wheeler, R. & Wheeler, T. 1936  
 St. Albans, fig. 47 k, Wheeler, R. & Wheeler, T. 1936  
 Altenstadt, grave 8 4, Keller, E. 1971  
 Altenstadt, grave 9 10, Keller, E. 1971  
 Villa d'Ancy, (Limé), Aisne, t. 1167, MAN St. Ger.  
 Augst, 2876, Riha, E. 1990



Augst, 2890, Riha, E. 1990  
 Augst, 2924, Riha, E. 1990  
 Augst, 2947, Riha, E. 1990  
 Aulnay-sur-Marne, pl.VI F, Brisson, A. et al, 1967  
 Aulnay-sur-Marne, pl.VI F, Brisson, A. et al, 1967  
 Bónaduz Switz. Lower Rhine, grave 397t. 13 10, Schneider-Schnekenburger, G. 1980  
 Bónaduz Switz. Lower Rhine, grave 627t. 16 4, Schneider-Schnekenburger, G. 1980  
 Bónaduz Switz. Lower Rhine, grave 630t. 16 7, Schneider-Schnekenburger, G. 1980  
 Brunn am Gebirge, grave 3, 2, Farka, C. 1976  
 Brunn am Gebirge, grave 5, 1, Farka, C. 1976  
 Caernarfon (Segontium), 51, Casey, P. & Davies, J. 1993  
 Chouy, Aisne, pl. 36. 6(2)n.s, Moreau, F. 1884  
 Cortrat, dep. Loiret, fig. 14 petit.coll. France-Lanord, 1963  
 Dunapentele, grave 105, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1060, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1118, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1132, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1136, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1179, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1184, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1209, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1236 11, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1304, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 133, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 135, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 36, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 458, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 8, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 82, Bóna, I. & Vágo, E. 1976  
 Dunapentele, 107, Alföldi, M. 1957  
 Dunapentele, 115, Alföldi, M. 1957  
 Dunapentele, 52, Alföldi, M. 1957  
 Dunapentele, 96, Alföldi, M. 1957  
 Dunstable, fig. 30 28, Matthews, C. 1981  
 St. Martin-de-Fontenay, Calvados, grave 191 3 5, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 256 2 4, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 256 2 6 etc, Pilet, C. 1994  
 St. Martin-de-Fontenay, Calvados, grave 359 4 1 etc, Pilet, C. 1994  
 Frénouville, grave 393, Pilet, C. 1980  
 Frénouville, grave 404, Pilet, C. 1980  
 Frénouville, grave 418, Pilet, C. 1980  
 Girm, VB Oberpullensdorf, grave 12 3b, Braun, T. 1991/2



Girm, VB Oberpullendorf, grave 13 3c, Braun, T. 1991/2

Girm, VB Oberpullendorf, grave 6 2, Braun, T. 1991/2

Keszthely-Dobogó, grave 17, Sagi, K. 1981

Keszthely-Dobogó, grave 18, Sagi, K. 1981

Keszthely-Dobogó, grave 32, Sagi, K. 1981

Keszthely-Dobogó, grave 64, Sagi, K. 1981

Keszthely-Dobogó, grave 73, Sagi, K. 1981

KlosterNeuburg, grave 14 t. 16 10, Neugebauer, J. & Neugebauer, C. 1986

KlosterNeuburg, grave 5 t. 5 4c, Neugebauer, J. & Neugebauer, C. 1986

Krefeld-Gellep, grave 1123 4c & 4k, Pirling, R. 1966

Krefeld-Gellep, grave 240 21a, Pirling, R. 1966

Krefeld-Gellep, grave 1290 a, Pirling, R. 1974

Krefeld-Gellep, grave 1573 9h, Pirling, R. 1974

Krefeld-Gellep, grave 1574 7a, Pirling, R. 1974

Krefeld-Gellep, grave 1822 3 afgh, Pirling, R. 1974

Krefeld-Gellep, grave 1833 7, Pirling, R. 1974

Krefeld-Gellep, grave 1849 10bc, Pirling, R. 1974

Krefeld-Gellep, grave 2794 h, Pirling, R. 197

Krefeld-Gellep, grave 2826 10de, Pirling, R. 1979

Krefeld-Gellep, grave 2978 a, Pirling, R. 1989

Krefeld-Gellep, grave 2985 c, Pirling, R. 1989

Krefeld-Gellep, grave 2987 a-d, Pirling, R. 1989

Künzing, Taf. 44 bottom, Fischer, T. 1988

Künzing, Taf. 44top, Fischer, T. 1988

Lankhills, Winchester, SF 140, Clarke, G. 1976

Lankhills, Winchester, SF 215, Clarke, G. 1976

Lankhills, Winchester, SF 248, Clarke, G. 1976

Lankhills, Winchester, SF 269, Clarke, G. 1976

Lankhills, Winchester, SF 315 grave 333, Clarke, G. 1976

Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976

Lankhills, Winchester, SF 399 grave 351, Clarke, G. 1976

Lankhills, Winchester, SF 443 grave 323, Clarke, G. 1976

Lankhills, Winchester, SF 583, Clarke, G. 1976

Lankhills, Winchester, SF 85, Clarke, G. 1976

Lauriacum (Enns), grave 62 1 alt, Vetters, H. & Karnitsch, P. et al, 1960

Lisieux, sép. 145, Service d'Archéologie, Calvados

Lisieux, sép. 944, Service d'Archéologie, Calvados

Lydney, fig. 104, Wheeler, R.E.M. & Wheeler, T.V. 1932

Matagne-la-Grande, 46h, Rober, R. 1983

Mayen, Abb23 g, Habery, W. 1942

München, grave 6 6, Keller, E. 1971

München, grave 11 8, Keller, E. 1971



Nijmegen, Brk1951/142, Steures, D.unpublished  
 Nijmegen, Brk1981/56, Steures, D.unpublished  
 Nijmegen, G1957/405, Steures, D.unpublished  
 Nijmegen, Ma1952/7, Steures, D.unpublished  
 Pécs, grave R244 1, Fülepi, F. 1977  
 Pécs, grave R244 2, Fülepi, F. 1977  
 Potzham, grave 4 10, Keller, E. 1971  
 Poundbury, fig. 72 5, Farwell, D. & Molleson, T. 1993  
 Poundbury, fig. 72 6, Farwell, D. & Molleson, T. 1993  
 Sagvar, grave 118, Burger, A. 1966  
 Sagvar, grave 131, Burger, A. 1966  
 Sagvar, grave 169, Burger, A. 1966  
 Sagvar, grave 188, Burger, A. 1966  
 Sagvar, grave 265, Burger, A. 1966  
 Sagvar, grave 305, Burger, A. 1966  
 Sagvar, grave 314, Burger, A. 1966  
 Sagvar, grave 317, Burger, A. 1966  
 Sagvar, grave 323, Burger, A. 1966  
 Sagvar, grave 325, Burger, A. 1966  
 Sagvar, grave 332, Burger, A. 1966  
 Sagvar, grave 340, Burger, A. 1966  
 Samson, Namur, grave 9 7, Dasnoy, A. 1969  
 Shakenoak, 34, Brodribb, A.et al, 1968  
 Shakenoak, 38, Brodribb, A.et al, 1968  
 Shakenoak, 246-8, Brodribb, A.et al, 1973  
 Shakenoak, 255, Brodribb, A.et al, 1973  
 Shakenoak, 295, Brodribb, A.et al, 1978  
 Stein-am-Rhein, Taf. 45 grave 24 7, Höneisen, M.ed. 1993  
 Tamins Switz. grave 1964/1 5, Schneider-Schneckenburger, G. 1980  
 Tournai, CRP 71/3, Brulet, R. & Coulon, G. 1977  
 Tournai, CRP145/2, Brulet, R. & Coulon, G. 1977  
 Tokod, grave 27, Mócsy, A. 1981  
 Tokod, grave 52, Mócsy, A. 1981  
 Tokod, grave 77, Mócsy, A. 1981  
 Tokod, grave 96, Mócsy, A. 1981  
 Tokod, grave 97B, Mócsy, A. 1981  
 Tongeren, grave 111 15d, Vanvinckenroye, W. 1984  
 Tongeren, grave 164 4b, Vanvinckenroye, W. 1984  
 Tongeren, grave 200 2ad, Vanvinckenroye, W. 1984  
 Tongeren, grave 240 1g, Vanvinckenroye, W. 1984  
 Tongeren, grave 37 3bgi, Vanvinckenroye, W. 1984  
 Tongeren, grave 50g, Vanvinckenroye, W. 1984



Uley, 1377, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B2 4947 & 4937, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B1 7503, Woodward, A. & Leach, P. 1993  
 Uley, fiche 1:B2 6702, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 12, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 14, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 18, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 19, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 20, Woodward, A. & Leach, P. 1993  
 Valley, Taf. 21 8, Keller, E. 1971  
 St. Albans, 354, Frere, S. 1984  
 St. Albans, fig. 79 74, Frere, S. 1972  
 Weilheim, Taf. 45, 3, Keller, E. 1971  
 Wessling, grave 12 3, Keller, E. 1971  
 Wessling, grave 16 7, Keller, E. 1971  
 Wessling, grave 18 4 & 12, Keller, E. 1971

#### **Yellow cylinder beads**

St. Albans, fig. 47 I, Wheeler, R. & Wheeler, T. 1936  
 Altenstadt, grave 8 4, Keller, E. 1971  
 Augst, 2876, Riha, E. 1990  
 Aulnay-sur-Marne, pl.VI F, Brisson, A. et al, 1967  
 Dunapentele, 97, Alföldi, M. 1957  
 Keszthely-Dobogó, grave 19, Sagi, K. 1981  
 Kirchheim bei München, grave 2 Abb.4 9, Keller, E. 1989  
 Kirchheim bei München, grave 5 Abb.5 3, Keller, E. 1989  
 Lankhills, Winchester, SF 182, Clarke, G. 1976  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Mayen, Abb23 g, Habery, W. 1942  
 Pécs, grave R193, Fülep, F. 1977  
 Tongeren, grave 37 3e, Vanvinckenroye, W. 1984

#### **Red cylinder beads**

Bónaduz Switz. Lower Rhine, grave 627t. 16 4, Schneider-Schnekenburger, G. 1980  
 Illzach, D. 83. 6. 22, Musée Historique de Mulhouse  
 Dunapentele, 7, Alföldi, M. 1957  
 Keszthely-Dobogó, grave 62, Sagi, K. 1981  
 Künzing, Taf. 44 bottom, Fischer, T. 1988  
 Mayen, Abb23 g, Habery, W. 1942  
 Nijmegen, Ma1952/7, Steures, D.unpublished  
 Sagvar, grave 185, Burger, A. 1966



### **Black cylinder beads**

- Villa d'Ancy, (Limé), Aisne, t. 1167(5), MAN St. Ger.
- Bónaduz Switz. Lower Rhine, grave 627t. 16 4, Schneider-Schnekenburger, G. 1980
- Bregenz, grave 544.fig. 1, Jacobs, J. & Von Schwerzenbach, K. 1910
- Dunapentele, grave 1078, Bóna, I. & Vágo, E. 1976
- Dunapentele, grave 165, Bóna, I. & Vágo, E. 1976
- Dunapentele, 115, Alföldi, M. 1957
- Villers-Erquy, fig. 142 5, Woimant, G. 1995
- St. Martin-de-Fontenay, Calvados, grave 206 4 7, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 359 4 6, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 63 3 1-3, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 63 4, Pilet, C. 1994
- Krefeld-Gellep, grave 2794k, Pirling, R. 1979
- Lankhills, Winchester, SF 315 grave 333, Clarke, G. 1976
- Lisieux, sép. 921 nk1, Service d'Archéologie, Calvados
- Lydney, fig. 104, Wheeler, R.E.M. & Wheeler, T.V. 1932
- Mayen, Abb23 g, Habery, W. 1942
- Tamins Switz. grave 1964/1 5, Schneider-Schnekenburger, G. 1980

### **White cylinder beads**

- St. Albans, fig. 47 m, Wheeler, R. & Wheeler, T. 1936
- Bónaduz Switz. Lower Rhine, grave 627t. 16. 4, Schneider-Schnekenburger, G. 1980
- Brunn am Gebirge, grave 16, 1d, Farka, C. 1976
- Brunn am Gebirge, grave 17, 3d, Farka, C. 1976
- Budapest (Aquincum), grave 143b, Tópal, J. 1993
- Budapest (Aquincum), grave 4, Tópal, J. 1993
- Chartres, sép. 709 C. 77. 7282. 2, Maison d'Archéologie, Chartres
- Frénouville, grave 418, Pilet, C. 1980
- Dunapentele, grave 133, Bóna, I. & Vágo, E. 1976
- Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976
- Dunapentele, 94, Alföldi, M. 1957
- Keszthely-Dobogó, grave 18, Sagi, K. 1981
- Lauriacum (Enns), grave 9 10, Kloiber, A. 1962
- Lydney, fig. 104, Wheeler, R.E.M. & Wheeler, T.V. 1932
- Mautern an der Donau, grave 8 Abb. 51, Thaller, H. 1950
- Sagvar, grave 178, Burger, A. 1966
- Sagvar, grave 201, Burger, A. 1966
- Sagvar, grave 211, Burger, A. 1966
- Sagvar, grave 251, Burger, A. 1966
- Sagvar, grave 265, Burger, A. 1966
- Sagvar, grave 286, Burger, A. 1966



Sagvar, grave 316, Burger, A. 1966

Tongeren, grave 111 15c, Vanvinckenroye, W. 1984

Tongeren, grave 50 6c, Vanvinckenroye, W. 1984

### **Blue square cylinder beads**

St. Albans, fig. 47 g, Wheeler, R. & Wheeler, T. 1936

Altenstadt, grave 9 10, Keller, E. 1971

Augst, 2876, Riha, E. 1990

Augst, 2890, Riha, E. 1990

Augst, 2947, Riha, E. 1990

Dunstable, fig. 28 7, Matthews, C. 1981

Dunapentele, grave 1126, Bóna, I. & Vágo, E. 1976

Dunapentele, grave 1150, Bóna, I. & Vágo, E. 1976

Dunapentele, grave 1160, Bóna, I. & Vágo, E. 1976

Dunapentele, grave 1184, Bóna, I. & Vágo, E. 1976

Dunapentele, 116, Alföldi, M. 1957

Dunapentele, 119, Alföldi, M. 1957

Dunapentele, 12, Alföldi, M. 1957

Dunapentele, 85, Alföldi, M. 1957

Kirchheim bei München, grave 5 Abb.5 3, Keller, E. 1989

Krefeld-Gellep, grave 2985 d, Pirling, R. 1989

Künzing, Taf. 44 bottom, Fischer, T. 1988

Lankhills, Winchester, SF 560, Clarke, G. 1976

Lauriacum (Enns), grave 62, 1 alt, 1c, Vetters, H. & Karnitsch, P. et al, 1960

Linz, 1994. 94f, Ruprechtsberger, E. 1996

München, grave 11 8, Keller, E. 1971

Poundbury, fig. 72 5, Farwell, D. & Molleson, T. 1993

Poundbury, fig. 72 6, Farwell, D. & Molleson, T. 1993

Sagvar, grave 316, Burger, A. 1966

Sagvar, grave 340, Burger, A. 1966

Shakenoak, 257, Brodribb, A. et al, 1973

Shakenoak, 298, Brodribb, A. et al, 1978

Tokod, grave 18, Mócsy, A. 1981

Uley, fiche 1:B1 1202, Woodward, A. & Leach, P. 1993

Uley, fiche 1:B1 3238, Woodward, A. & Leach, P. 1993

Uley, fiche 1:B2 6799, Woodward, A. & Leach, P. 1993

Uley, fiche 1:B1 7332, Woodward, A. & Leach, P. 1993

Valley, Taf. 21 9, Keller, E. 1971

### **Green square cylinder beads**

St. Albans, fig. 47 d, Wheeler, R. & Wheeler, T. 1936

Brunn am Gebirge, grave 5 2, Farka, C. 1976



Canterbury, 1329, Blockley, K. et al, 1995  
 Furfooz, F13, Nenquin, J. 1953  
 Dunapentele, grave 107, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1098, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1132, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1136, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1160, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1184, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 82, Bóna, I. & Vágo, E. 1976  
 Krefeld-Gellep, grave 1573 9c, Pirling, R. 1974  
 Krefeld-Gellep, grave 2972 8de, Pirling, R. 1989  
 Krefeld-Gellep, grave 2985 ab, Pirling, R. 1989  
 Künzing, Taf. 44 bottom, Fischer, T. 1988  
 Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 583, Clarke, G. 1976  
 Lisieux, sép. 370, Service d'Archéologie, Calvados  
 Poundbury, fig. 72 7, Farwell, D. & Molleson, T. 1993  
 Sagvar, grave 325, Burger, A. 1966  
 Tokod, grave 18, Mócsy, A. 1981  
 Tokod, grave 27, Mócsy, A. 1981  
 Tokod, grave 96, Mócsy, A. 1981  
 Uley, fiche 1:B2 371, Woodward, A. & Leach, P. 1993  
 St. Albans, 355, Frere, S. 1984  
 St. Albans, 357, Frere, S. 1984  
 Virton, 12, Masséart, C. unpubl. excav  
 Tokod, grave 97A, Mócsy, A. 1981

#### **Yellow square cylinder beads**

Dunapentele, grave 1134, Bóna, I. & Vágo, E. 1976  
 Krefeld-Gellep, grave 1043 12, Pirling, R. 1966  
 Linz, 1994. 94f, Ruprechtsberger, E. 1996  
 München, grave 11 8, Keller, E. 1971  
 Valley, Taf. 21 9, Keller, E. 1971

#### **White square cylinder beads**

Chartres, C77. 6312. 6-12(6), Maison d'Archéologie, Chartres  
 Dunapentele, grave 1326, Bóna, I. & Vágo, E. 1976  
 Dunapentele, 17, Alföldi, M. 1957  
 Sagvar, grave 188, Burger, A. 1966  
 Sagvar, grave 251, Burger, A. 1966  
 Tokod, grave 18, Mócsy, A. 1981



### **Long green hexagonal cylinder beads**

- St. Albans, fig. 47 a, Wheeler, R. & Wheeler, T. 1936  
St. Albans, fig. 47 b, Wheeler, R. & Wheeler, T. 1936  
Villa d'Ancy, (Limé), Aisne, t. 1167, MAN St. Ger.  
Villa d'Ancy, (Limé), Aisne, t. 206. 36724, MAN St. Ger.  
Atzgersdorf, 36330, RGZM  
Augst, 2808, Riha, E. 1990  
Augst, 2826, Riha, E. 1990  
Augst, 2846, Riha, E. 1990  
Augst, 2876, Riha, E. 1990  
Augst, 2890, Riha, E. 1990  
Augst, 2902, Riha, E. 1990  
Augst, 2924, Riha, E. 1990  
Augst, 2935, Riha, E. 1990  
Augst, 2947, Riha, E. 1990  
Augst, 2952, Riha, E. 1990  
Basel, grave 298, Degen, R. 1957  
Brunn am Gebirge, grave 16, 1g, Farka, C. 1976  
Caernarfon (Segontium), 53, Casey, P. & Davies, J. 1993  
Canterbury, 660, Blockley, K. et al, 1995  
Chartres, C73. 1363->, Maison d'Archéologie, Chartres  
Chouy, Aisne, pl. 36. 6(5)n.s, Moreau, F. 1884  
Fôret de Compiègne, 29. 125, MAN St. Ger.  
Fôret de Compiègne, 29. 132, MAN St. Ger.  
Dunapentele, grave 1316, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1332, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 19a, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 458, Bóna, I. & Vágo, E. 1976  
Dunapentele, 109, Alföldi, M. 1957  
Dunapentele, 119, Alföldi, M. 1957  
Dunapentele, 126, Alföldi, M. 1957  
Dunapentele, 15, Alföldi, M. 1957  
Dunapentele, 51, Alföldi, M. 1957  
Dunapentele, 63, Alföldi, M. 1957  
Dunapentele, 97, Alföldi, M. 1957  
Keszthely-Dobogó, grave 49, Sagi, K. 1981  
Keszthely-Dobogó, grave 73, Sagi, K. 1981  
Kirchheim bei München, grave 15 Abb.6 7, Keller, E. 1989  
Krefeld-Gellep, grave 1043 11, Pirling, R. 1966  
Krefeld-Gellep, grave 1274 a, Pirling, R. 1974  
Krefeld-Gellep, grave 1279 a, Pirling, R. 1974  
Krefeld-Gellep, grave 1470 17cde, Pirling, R. 1974



Krefeld-Gellep, grave 1573 9bd, Pirling, R. 1974  
 Krefeld-Gellep, grave 2640 20bc, Pirling, R. 1979  
 Krefeld-Gellep, grave 2794ade, Pirling, R. 1979  
 Krefeld-Gellep, grave 3007 i, Pirling, R. 1989  
 Lankhills, Winchester, SF 140, Clarke, G. 1976  
 Lankhills, Winchester, SF 399 grave 351, Clarke, G. 1976  
 Lankhills, Winchester, SF 424 grave 326, Clarke, G. 1976  
 Lankhills, Winchester, SF 436 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 85, Clarke, G. 1976  
 Lauriacum (Enns), grave 9 8, Kloiber, A. 1962  
 Lauriacum (Enns), grave 62, 1 alt, 1b, Vetters, H. & Karnitsch, P. et al, 1960  
 Lisieux, c11, Service d'Archéologie, Calvados  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Lisieux, sép. 370, Service d'Archéologie, Calvados  
 Lisieux, sép. 435, Service d'Archéologie, Calvados  
 Lisieux, sép. 744, Service d'Archéologie, Calvados  
 Lisieux, sép. 818, Service d'Archéologie, Calvados  
 Maising, Taf. 37 9, Keller, E. 1971  
 Mamer (Luxembourg), 74/15/422(2), Musée d'Histoire et d'Art, Luxembourg  
 Matagne-la-Grande, 46a, Rober, R. 1983  
 München, grave 5 6, Keller, E. 1971  
 München, grave 11 8, Keller, E. 1971  
 München, grave 8 11, Keller, E. 1971  
 München, grave 8 13, Keller, E. 1971  
 München, grave 8 5, Keller, E. 1971  
 Neuburg an der Donau, grave 13, Keller, E. 1979  
 Nijmegen, Ma1952/49, Steures, D.unpublished  
 Oudenburg, grave 191 6b, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, grave 67 4bcd, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, grave 79 1c, Mertens, J. & Van Impe, L. 1971  
 Richborough, plate LV 243, Bushe-Foxe, J. 1949  
 Richborough, plate LV 252, Bushe-Foxe, J. 1949  
 Sagvar, grave 113, Burger, A. 1966  
 Sagvar, grave 120, Burger, A. 1966  
 Sagvar, grave 140, Burger, A. 1966  
 Sagvar, grave 149, Burger, A. 1966  
 Sagvar, grave 171, Burger, A. 1966  
 Sagvar, grave 172, Burger, A. 1966  
 Sagvar, grave 185, Burger, A. 1966  
 Sagvar, grave 200, Burger, A. 1966  
 Sagvar, grave 201, Burger, A. 1966  
 Sagvar, grave 211, Burger, A. 1966



Sagvar, grave 218, Burger, A. 1966  
 Sagvar, grave 25 5, Burger, A. 1966  
 Sagvar, grave 252, Burger, A. 1966  
 Sagvar, grave 261, Burger, A. 1966  
 Sagvar, grave 265, Burger, A. 1966  
 Sagvar, grave 283, Burger, A. 1966  
 Sagvar, grave 296, Burger, A. 1966  
 Sagvar, grave 305, Burger, A. 1966  
 Sagvar, grave 306, Burger, A. 1966  
 Sagvar, grave 325, Burger, A. 1966  
 Stein-am-Rhein, Taf. 45 grave 24 7, Höneisen, M.ed. 1993  
 Tokod, grave 37, Mócsy, A. 1981  
 Tokod, grave 96, Mócsy, A. 1981  
 Tokod, grave 97A, Mócsy, A. 1981  
 Tokod, grave 98, Mócsy, A. 1981  
 Tongeren, grave 111 15a, Vanvinckenroye, W. 1984  
 Tongeren, grave 200 2e, Vanvinckenroye, W. 1984  
 Tongeren, Grave 240 1d, Vanvinckenroye, W. 1984  
 Tongeren, grave 37 4, Vanvinckenroye, W. 1984  
 Tongeren, grave 50 6ef, Vanvinckenroye, W. 1984  
 Tongeren, grave 69 7a, b, Vanvinckenroye, W. 1984  
 Uley, fig. 126 11, Woodward, A. & Leach, P. 1993  
 Uley, fig. 126 21, Woodward, A. & Leach, P. 1993  
 Valley, Taf. 21 8, Keller, E. 1971  
 St. Albans, fig. 79 75, Frere, S. 1972  
 Weilheim, Taf. 45 3, Keller, E. 1971  
 Wessling, grave 10 2, Keller, E. 1971  
 Wessling, grave 11 11, Keller, E. 1971  
 Wessling, grave 11 9, Keller, E. 1971  
 Wessling, grave 18 12, Keller, E. 1971  
 Wessling, grave 18 4, Keller, E. 1971

#### **Long blue hexagonal cylinder beads**

Augst, 2907, Riha, E. 1990  
 Augst, 2947, Riha, E. 1990  
 Burgheim, grave 22/1953, Keller, E. 1971  
 Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 436 grave 323, Clarke, G. 1976  
 Lauriacum (Enns), grave 74 4, Vetters, H. & Karnitsch, P. et al, 1960  
 Sagvar, grave 169, Burger, A. 1966  
 Sagvar, grave 188, Burger, A. 1966  
 Sagvar, grave 254, Burger, A. 1966



Sagvar, grave 342, Burger, A. 1966  
Tokod, grave 77, Mócsy, A. 1981  
Tongeren, grave 37 3h, Vanvinckenroye, W. 1984

**Blue diamond faceted beads**

Villa d'Ancy, (Limé), Aisne, t. 206. 36724, MAN St. Ger.  
Augst, 2808, Riha, E. 1990  
Augst, 2846, Riha, E. 1990  
Augst, 2876, Riha, E. 1990  
Augst, 2888, Riha, E. 1990  
Augst, 2902, Riha, E. 1990  
Augst, 2906, Riha, E. 1990  
Augst, 2907, Riha, E. 1990  
Augst, 2935, Riha, E. 1990  
Augst, 2947, Riha, E. 1990  
Augst, 2950, Riha, E. 1990  
Basel, grave 298, Degen, R. 1957  
Basel, grave 300, Degen, R. 1957  
Bónaduz Switz. Lower Rhine, grave 138 Taf. 7 8, Schneider-Schnekenburger, G. 1980  
Champdolent, St. Germain-les-Corbeil, 12. 58, MAN St. Ger.  
Chartres, sép. 709.C77. 7282. 2, Maison d'Archéologie, Chartres  
Chartres, sép. 773.C77. 7381. 2, Maison d'Archéologie, Chartres  
Chouy, Aisne, pl. 36. 6(4)n.s, Moreau, F. 1884  
Fôret de Compiègne, 29. 132, MAN St. Ger.  
Fôret de Compiègne, 29125b(4), MAN St. Ger.  
Dunapentele, grave 1132, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 121, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1304, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 165, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 167, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 19a, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 36, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 458, Bóna, I. & Vágo, E. 1976  
Dunapentele, 120, Alföldi, M. 1957  
Girm, VB Oberpullensdorf, grave 12 3a, Braun, T. 1991/2  
Girm, VB Oberpullensdorf, grave 13 3b, Braun, T. 1991/2  
Girm, VB Oberpullensdorf, grave 5 1, Braun, T. 1991/2  
Gross-Gerau, grave 401 Abb.1 10, Jährling, W. 1985  
Isny, Kr. Ravensburg, kette 5, Garbsch, J. 1971  
Keszthely-Dobogó, grave 10, Sagi, K. 1981  
Keszthely-Dobogó, grave 18, Sagi, K. 1981  
Keszthely-Dobogó, grave 49, Sagi, K. 1981



Keszthely-Dobogó, grave 73, Sagi, K. 1981  
 Kirchheim bei München, grave 15 Abb.6 4, Keller, E. 1989  
 Kirchheim bei München, grave 15 Abb.6 9, Keller, E. 1989  
 Kirchheim bei München, grave 2 Abb.4 14, Keller, E. 1989  
 Kirchheim bei München, grave 5 Abb.5 3, Keller, E. 1989  
 Krefeld-Gellep, grave 1573 9e, Pirling, R. 1974  
 Krefeld-Gellep, grave 2640 20a, Pirling, R. 1979  
 Krefeld-Gellep, grave 2794c, Pirling, R. 1979  
 Krefeld-Gellep, grave 2887 11b, Pirling, R. 1979  
 Krefeld-Gellep, grave 2932 acegi, Pirling, R. 1989  
 Krefeld-Gellep, grave 3004 a-e, Pirling, R. 1989  
 Lankhills, Winchester, SF 140, Clarke, G. 1976  
 Lankhills, Winchester, SF 363 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 424 grave 326, Clarke, G. 1976  
 Lankhills, Winchester, SF 436 grave 323, Clarke, G. 1976  
 Lisieux, sép. 145, Service d'Archéologie, Calvados  
 Lisieux, sép. 370, Service d'Archéologie, Calvados  
 Lisieux, sép. 818, Service d'Archéologie, Calvados  
 Lisieux, sép. 944, Service d'Archéologie, Calvados  
 Mamer (Luxembourg), 74/15/422, Musée d'Histoire et d'Art, Luxembourg  
 Matagne-la-Grande, 46c, Rober, R. 1983  
 München, grave 5 6, Keller, E. 1971  
 München, grave 11 8, Keller, E. 1971  
 München, grave 15 15, Keller, E. 1971  
 München, grave 8 5, Keller, E. 1971  
 Neuburg an der Donau, grave 13, Keller, E. 1979  
 Oudenburg, grave 67 cat.no. 4e, Mertens, J. & Van Impe, L. 1971  
 Pécs, grave R244 1 & 2, Fülep, F. 1977  
 Sagvar, grave 118, Burger, A. 1966  
 Sagvar, grave 131, Burger, A. 1966  
 Sagvar, grave 200, Burger, A. 1966  
 Sagvar, grave 211, Burger, A. 1966  
 Sagvar, grave 251, Burger, A. 1966  
 Sagvar, grave 275, Burger, A. 1966  
 Sagvar, grave 283, Burger, A. 1966  
 Sagvar, grave 32, Burger, A. 1966  
 Sagvar, grave 328, Burger, A. 1966  
 Sagvar, grave 333, Burger, A. 1966  
 Tokod, grave 77, Mócsy, A. 1981  
 Tokod, grave 96, Mócsy, A. 1981  
 Tongeren, grave 37 3f, Vanvinckenroye, W. 1984  
 Tongeren, pl.VII. 32.g.b, Vanvinckenroye, W. 1995



Valley, Taf. 21, 8, Keller, E. 1971

Vermand doubtful provenance, 84953, MAN St. Ger.

Weilheim, Taf. 45, 3, Keller, E. 1971

Wessling, grave 11 9, Keller, E. 1971

Wessling, grave 12 3, Keller, E. 1971

Wessling, grave 18 4, Keller, E. 1971

#### **Green diamond faceted beads**

Augst, 2947, Riha, E. 1990

Augst, 2950, Riha, E. 1990

Chartres, sép. 723.C77. 7088. 3, Maison d'Archéologie, Chartres

Keszthely-Dobogó, grave 10, Sagi, K. 1981

Keszthely-Dobogó, grave 73, Sagi, K. 1981

Krefeld-Gellep, grave 1470 17ab, Pirling, R. 1974

Krefeld-Gellep, grave 2887 11ac, Pirling, R. 1979

Lankhills, Winchester, SF 424 grave 326, Clarke, G. 1976

Lankhills, Winchester, SF 436 grave 323, Clarke, G. 1976

Potzham, grave 4 10, Keller, E. 1971

Sagvar, grave 149, Burger, A. 1966

#### **Blue segmented cylinder beads**

Augst, 1253, Riha, E. 1990

Augst, 2890, Riha, E. 1990

Canterbury, 1340, Blockley, K. et al, 1995

Canterbury, 1342, Blockley, K. et al, 1995

Canterbury, 1343, Blockley, K. et al, 1995

Krefeld-Gellep, grave 2826 13, Pirling, R. 1979

Lankhills, Winchester, SF 364 grave 336, Clarke, G. 1976

Lauriacum (Enns), grave 74 5, Vetter, H. & Karnitsch, P. et al, 1960

Pécs, grave R193, Fülep, F. 1977

#### **Green segmented cylinder beads**

Augst, 2898, Riha, E. 1990

Brunn am Gebirge, grave 10, 4, Farka, C. 1976

Brunn am Gebirge, grave 16, 1e, Farka, C. 1976

Caernarfon (Segontium), 56, Casey, P. & Davies, J. 1993

Dunapentele, grave 939, Bóna, I. & Vágo, E. 1976

Lankhills, Winchester, SF 364 grave 336, Clarke, G. 1976

Nijmegen, LN1957/88, Steures, D. unpublished

Sagvar, grave 211, Burger, A. 1966

Sagvar, grave 283, Burger, A. 1966

Samson, Namur, grave 9 7, Dasnoy, A. 1969



### **White spherical segmented beads**

Bonaduz Switz. Lower Rhine, grave 397 t.13 10, Schneider-Schnekenburger, G. 1980  
Bonaduz Switz. Lower Rhine, grave 630 t.16 7, Schneider-Schnekenburger, G. 1980  
St. Martin-de-Fontenay, Calvados, grave 270, Pilet, C. 1994  
Dunapentele, 17, Alföldi, M. 1957  
Poundbury, fig. 72 4b, Farwell, D. & Molleson, T. 1993  
Sagvar, grave 305, Burger, A. 1966  
Sagvar, grave 323, Burger, A. 1966  
Sagvar, grave 332, Burger, A. 1966  
Sagvar, grave 342, Burger, A. 1966

### **Blue heart shaped beads**

Villa d'Ancy, t. 206. 36724, MAN St. Ger.  
Augst, 2846, Riha, E. 1990  
Augst, 2947, Riha, E. 1990  
Budapest, grave 112b, Tópal, J. 1993  
Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976  
Keszthely, grave 83, Sagi, K. 1981  
Kirchheim bei München, grave 15 Abb.6 8, Keller, E. 1989  
Krefeld-Gellep, grave 1231 9q-s, Pirling, R. 1966  
Krefeld-Gellep, grave 1470 17fg, Pirling, R. 1974  
Krefeld-Gellep, grave 1573 9g, Pirling, R. 1974  
Krefeld-Gellep, grave 2984 c, Pirling, R. 1989  
Lankhills, SF 363 grave 336, Clarke, G. 1976  
Lisieux, sép. 758, Service d'Archéologie, Calvados  
Mamer, 74/15/320, Musée d'Histoire et d'Art, Luxembourg  
Nijmegen, G1957/405(1), Steures, D.unpublished  
Oudenburg, grave 177 cat.no. 5, Mertens, J. & Van Impe, L. 1971  
Tournai, CRP 71/3, Brulet, R. & Coulon, G. 1977  
Tongeren, grave 240 1f, Vanvinckenroye, W. 1984  
Tongeren, I/0551, Musée Curtius, Liège

### **Green heart shaped beads**

Villa d'Ancy, (Limé), Aisne, t. 1167, MAN St. Ger.  
Augst, 1226, Riha, E. 1990  
Augst, 2888, Riha, E. 1990  
Augst, 2907, Riha, E. 1990  
Brunn am Gebirge, grave 7, 1e, Farka, C. 1976  
Dunapentele, grave 446, Bóna, I. & Vágo, E. 1976  
Krefeld-Gellep, grave 3007 gh, Pirling, R. 1989  
Tongeren, I/0551, Musée Curtius, Liège



**Blue convex cylinder beads**

- St. Albans, fig. 47 f, Wheeler, R. & Wheeler, T. 1936  
Augst, 2931, Riha, E. 1990  
Chartres, sép. 709.C77. 7282. 2, Maison d'Archéologie, Chartres  
Frénouville, grave 379, Pilet, C. 1980  
Dunapentele, grave 1304, Bóna, I. & Vágo, E. 1976  
Dunapentele, 109, Alföldi, M. 1957  
Dunapentele, 110, Alföldi, M. 1957  
Dunapentele, 52, Alföldi, M. 1957  
Krefeld-Gellep, grave 240 21d, Pirling, R. 1966  
Krefeld-Gellep, grave 1822 3d, Pirling, R. 1974  
Lankhills, Winchester, SF 140, Clarke, G. 1976  
Lankhills, Winchester, SF 215, Clarke, G. 1976  
Lankhills, Winchester, SF 425, Clarke, G. 1976  
Sagvar, grave 131, Burger, A. 1966  
Sagvar, grave 328, Burger, A. 1966  
Shakenoak, 260, Brodribb, A. et al, 1973

**Flat round or flat cylinder beads**

- Brény, Aisne (approx pt in Aisne), t. 1552, MAN St. Ger.  
Caernarfon (Segontium), 62, Casey, P. & Davies, J. 1993  
Dunapentele, 124, Alföldi, M. 1957  
Dunapentele, 126, Alföldi, M. 1957  
Dunapentele, 129, Alföldi, M. 1957  
Dunapentele, 7, Alföldi, M. 1957  
Keszthely-Dobogó, grave 32, Sagi, K. 1981  
Künzing, Taf. 44 bottom, Fischer, T. 1988  
Lisieux, sép. 758, Service d'Archéologie, Calvados  
Matagne-la-Grande, 46e, Rober, R. 1983  
Pécs, grave R187, Fülep, F. 1977  
Pécs, grave R193, Fülep, F. 1977  
Sagvar, grave 261, Burger, A. 1966  
Sagvar, grave 302, Burger, A. 1966  
Shakenoak, 41, Brodribb, A. et al, 1968  
Tongeren, grave 240 1b, Vanvinckenroye, W. 1984  
Tongeren, grave 37 3d, Vanvinckenroye, W. 1984  
Uley, fig. 126 23, Woodward, A. & Leach, P. 1993



**MULTI-COLOUR BEADS WITH TRAIL DECORATION (typologically 4th & 5th cent.)**

**Annular beads or spherical with trail decoration**

- Altenstadt, grave 21 6, 7, Keller, E. 1971
- Augst, 2793, Riha, E. 1990
- Augst, 2800, Riha, E. 1990
- Augst, 2808, Riha, E. 1990
- Augst, 2888, Riha, E. 1990
- Brunehaut-Liberchies, fig. 35 8, Mertens, J. & Brulet, R. 1974
- Budapest (Aquincum), (vii) grave 5 17, Tópal, J. 1993
- Budapest (Aquincum), grave 7(vii) 5, Tópal, J. 1993
- Budapest (Aquincum), grave 7(vii) 6, Tópal, J. 1993
- Caernarfon (Segontium), 48, Casey, P. & Davies, J. 1993
- Chouy, Aisne, pl. 36 5new ser, Moreau, F. 1884
- Coventinas Well, 128, Allason-Jones, L. & McKay, B. 1985
- Dunapentele, grave 133, Bóna, I. & Vágo, E. 1976
- Dunapentele, grave 86, Bóna, I. & Vágo, E. 1976
- Dunapentele, 107, Alföldi, M. 1957
- St. Martin-de-Fontenay, Calvados, grave 206 4 5, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 240 3b, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 270 50etc, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 270 54etc, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 270 55, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 270 60, Pilet, C. 1994
- St. Martin-de-Fontenay, Calvados, grave 341 2 2, Pilet, C. 1994
- Girm, VB Oberpullendorf, grave 4 3b, Braun, T. 1991/2
- Girm, VB Oberpullendorf, grave 4 3c, Braun, T. 1991/2
- Girm, VB Oberpullendorf, grave 4 3d, Braun, T. 1991/2
- Illzach, D. 83. 6. 23, Musée Historique de Mulhouse
- Keszthely-Dobogó, grave 99, Sagi, K. 1981
- Keszthely-Dobogó, grave 47, Sagi, K. 1981
- Keszthely-Dobogó, grave 74, Sagi, K. 1981
- Keszthely-Dobogó, grave 78, Sagi, K. 1981
- Keszthely-Dobogó, grave 56, Sagi, K. 1981
- Krefeld-Gellep, grave 720 7, Pirling, R. 1966
- Krefeld-Gellep, grave 1500 11, Pirling, R. 1974
- Krefeld-Gellep, grave 1500 12, Pirling, R. 1974
- Krefeld-Gellep, grave 1854 13ab, Pirling, R. 1974
- Krefeld-Gellep, grave 2826 15, Pirling, R. 1979
- Krefeld-Gellep, grave 2984 d, Pirling, R. 1989
- Leicester, fig. 92 3, Kenyon, K. 1948
- Lisieux, sép. 945, Service d'Archéologie, Calvados



Matagne-la-Grande, 46f, Rober, R. 1983  
 Mayen, Abb23 g, Habery, W. 1942  
 Pécs, grave R244 2, Fülep, F. 1977  
 Pécs, grave R278, Fülep, F. 1977  
 Richborough, plateXI 25, Bushe-Foxe, J. 1932  
 Richborough, plate LV 236, Bushe-Foxe, J. 1949  
 Richborough, plate LV 237, Bushe-Foxe, J. 1949  
 Richborough, plate LV 238, Bushe-Foxe, J. 1949  
 Sagvar, grave 184, Burger, A. 1966  
 Sagvar, grave 24 5, Burger, A. 1966  
 Sagvar, grave 247, Burger, A. 1966  
 Sagvar, grave 306, Burger, A. 1966  
 Sagvar, grave 314, Burger, A. 1966  
 Sagvar, grave 317, Burger, A. 1966  
 Savelborn ( Luxembourg), 1988-117, Musée d'Histoire et d'Art, Luxembourg  
 Sint Martens Latem, Brakel, 2, Vermeulen, F. 1992  
 Tongeren, grave 29 11, Vanvinckenroye, W. 1984  
 Trier doubtful provenance, Abb. 4. 1, Loeschcke, S. 1925  
 Trier doubtful provenance, Abb. 4. 14, Loeschcke, S. 1925  
 Trier doubtful provenance, Abb. 4. 23, Loeschcke, S. 1925  
 Trier, Abb. 4. 10, Loeschcke, S. 1925  
 Trier, Abb. 4. 2, Loeschcke, S. 1925  
 Trier, Abb. 4. 26, Loeschcke, S. 1925  
 Trier, Abb. 4. 7, Loeschcke, S. 1925  
 Trier, Abb. 4. 9, Loeschcke, S. 1925  
 Trier, Abb. 4. 31, Loeschcke, S. 1925  
 Trier, Abb. 4. 33, Loeschcke, S. 1925  
 Trier, Abb. 4. 34, Loeschcke, S. 1925  
 Trier, Abb. 4. 36, Loeschcke, S. 1925  
 Trier, Abb. 4. 37, Loeschcke, S. 1925  
 Trier, Abb. 4. 38, Loeschcke, S. 1925  
 Trier, Abb. 4. 39, Loeschcke, S. 1925  
 Trier, Abb. 4. 41, Loeschcke, S. 1925  
 Trier/environs, Abb. 4. 11, Loeschcke, S. 1925  
 Trier/environs, Abb. 4. 15, Loeschcke, S. 1925  
 Trier/environs, Abb. 4. 22, 4. 24, Loeschcke, S. 1925  
 Trier/environs, Abb. 4. 30, Loeschcke, S. 1925  
 Trier/environs, Abb. 4. 5, Loeschcke, S. 1925  
 Trier, Abb. 1. 4, Loeschcke, S. 1925  
 Trier, Abb. 1. 6, Loeschcke, S. 1925  
 Trier, Abb. 1. 7, Loeschcke, S. 1925  
 Virton, 5, Masséart, C. unpubl. excav



Virton, 6, Masséart, C. unpubl. excav

Virton, 7, Masséart, C. unpubl. excav

### **Trail beads of other shapes**

Villa d'Ancy, (Limé), Aisne, t. 206 36734, MAN St. Ger.

Augst, 1232, Riha, E. 1990

Augst, 2888, Riha, E. 1990

Budapest (Aquincum), grave 143c, Tópal, J. 1993

Burgheim, grave 19 14, Keller, E. 1971

Fôret de Compiègne, 29128, MAN St. Ger.

Cortrat, dep. Loiret, fig. 13 grave coll. France-Lanord, 1963

Dunapentele, grave 86, Bóna, I. & Vágo, E. 1976

Dunapentele, 107, Alföldi, M. 1957

Dunapentele, 124, Alföldi, M. 1957

Dunapentele, 14, Alföldi, M. 1957

Dunapentele, 15, Alföldi, M. 1957

Dunapentele, 56, Alföldi, M. 1957

St. Martin-de-Fontenay, Calvados, grave 256 2 2, Pilet, C. 1994

Furfooz, F13, Nenquin, J. 1953

Girm, VB Oberpullensdorf, grave 10 1, Braun, T. 1991/2

Girm, VB Oberpullensdorf, grave 4 3a, Braun, T. 1991/2

Gross-Gerau, grave 400 Abb2. 2, Jährling, W. 1985

Illzach, D. 83. 6. 22, Musée Historique de Mulhouse

Keszthely-Dobogó, grave 110, Sagi, K. 1981

Keszthely-Dobogó, grave 99, Sagi, K. 1981

Krefeld-Gellep, grave 333 6, Pirling, R. 1966

Krefeld-Gellep, grave 2826 14, Pirling, R. 1979

Lankhills, Winchester, SF 436 grave 323, Clarke, G. 1976

Maastricht, MAPL23/2-OJ-17, Sectie Archeologie Gemeente Maastricht

Maastricht, MAPL23/2-OK-35, Sectie Archeologie Gemeente Maastricht

Mailly-le-Camp NW Trouan, 283, Ravaux, J. 1992

Mailly-le-Camp NW Trouan, 284, Ravaux, J. 1992

Mailly-le-Camp NW Trouan, 285, Ravaux, J. 1992

Maising, Taf. 37 8, Keller, E. 1971

Neuburg an der Donau, grave 13, Keller, E. 1979

Nijmegen, Ma1952/5, Steures, D.unpublished

Nijmegen, Ma1963/59, Steures, D.unpublished

Sagvar, grave 131, Burger, A. 1966

Sagvar, grave 178, Burger, A. 1966

Sagvar, grave 247, Burger, A. 1966

Sagvar, grave 286, Burger, A. 1966



Trier doubtful provenance, Abb. 4. 8, Loeschcke, S. 1925

Trier, 4. 17, Loeschcke, S. 1925

Trier, 4. 19, Loeschcke, S. 1925

Trier, Abb. 4. 40, Loeschcke, S. 1925

Trier, Abb. 1. 1 & 1. 14, Loeschcke, S. 1925

Trier, Abb. 1. 12, Loeschcke, S. 1925

Trier, Abb. 1. 2, Loeschcke, S. 1925

Trier, Abb. 1. 8, Loeschcke, S. 1925

Virton, 8, Masséart, C. unpubl. excav

Virton, 9, Masséart, C. unpubl. excav

Wasserbillig, Abb. 4. 18, Loeschcke, S. 1925

### **Annular or spherical beads with double swag & eyes**

Augst, 2800, Riha, E. 1990

Augst, 2808, Riha, E. 1990

St. Martin-de-Fontenay, Calvados, grave 240 3b, Pilet, C. 1994

Keszthely, grave 78, Sagi, K. 1981

Krefeld-Gellep, grave 1500 12, Pirling, R. 1974

Lisieux, sép. 945, Service d'Archéologie, Calvados

Richborough, plate LV 236, Bushe-Foxe, J. 1949

Sagvar, grave 184, Burger, A. 1966

Sagvar, grave 247, Burger, A. 1966

Trier doubtful provenance, Abb. 4. 1, Loeschcke, S. 1925

Trier, Abb. 4. 2, Loeschcke, S. 1925

Trier, Abb. 4. 26, Loeschcke, S. 1925

Trier, Abb. 4. 7, Loeschcke, S. 1925

Trier, Abb. 1. 4, Loeschcke, S. 1925

Trier, Abb. 1. 6, Loeschcke, S. 1925

Virton, 6, Masséart, C. unpubl. excav

### **Annular beads with eyes only**

Augst, 2888, Riha, E. 1990

Budapest (Aquincum), grave 7(vii) 5, Tópal, J. 1993

Budapest (Aquincum), grave 7(vii) 6, Tópal, J. 1993

St. Martin-de-Fontenay, Calvados, grave 270 55, Pilet, C. 1994

St. Martin-de-Fontenay, Calvados, grave 270 60, Pilet, C. 1994

Dunapentele, 107, Alföldi, M. 1957

Keszthely-Dobogó, grave 56, Sagi, K. 1981

Krefeld-Gellep, grave 1854 13ab, Pirling, R. 1974

Matagne-la-Grande, 46f, Rober, R. 1983

Pécs, grave R278, Fülep, F. 1977



Sagvar, grave 306, Burger, A. 1966  
Sagvar, grave 314, Burger, A. 1966  
Trier, Abb. 4. 9, Loeschcke, S. 1925  
Trier/environs, Abb. 4. 30, Loeschcke, S. 1925  
Trier/environs, Abb. 4. 5, Loeschcke, S. 1925

**Annular or spherical beads with scrabble**

Altenstadt, grave 21 6, 7, Keller, E. 1971  
Augst, 2793, Riha, E. 1990  
Brunehaut-Liberchies, fig. 35 8, Mertens, J. & Brulet, R. 1974  
Coventinas Well, 128, Allason-Jones, L. & McKay, B. 1985  
St. Martin-de-Fontenay, Calvados, grave 206 4 5, Pilet, C. 1994  
St. Martin-de-Fontenay, Calvados, grave 270 50etc, Pilet, C. 1994  
St. Martin-de-Fontenay, Calvados, grave 270 54etc, Pilet, C. 1994  
St. Martin-de-Fontenay, Calvados, grave 341 2 2, Pilet, C. 1994  
Krefeld-Gellep, grave 333 6, Pirling, R. 1966  
Krefeld-Gellep, grave 720 7, Pirling, R. 1966  
Leicester, fig. 92 3, Kenyon, K. 1948  
Richborough, plate LV 238, Bushe-Foxe, J. 1949  
Savelborn ( Luxembourg), 1988-117, Musée d'Histoire et d'Art, Luxembourg  
Trier doubtful provenance, Abb. 4. 14, Loeschcke, S. 1925  
Trier, Abb. 4. 38, Loeschcke, S. 1925  
Trier/environs, Abb. 4. 11, Loeschcke, S. 1925  
Trier/environs, Abb. 4. 15, Loeschcke, S. 1925  
Virton, 5, Masséart, C. unpubl. excav

**Annular and other bead with single wave decoration**

Girm, VB Oberpullensdorf, grave 10 1, Braun, T. 1991/2  
Dunapentele, grave 133, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 86, Bóna, I. & Vágo, E. 1976  
Dunapentele, 107, Alföldi, M. 1957  
Keszthely-Dobogó, grave 47, Sagi, K. 1981  
Maising, Taf. 37 8, Keller, E. 1971  
Pécs, grave R244 2, Fülep, F. 1977  
Sagvar, grave 184, Burger, A. 1966  
Sagvar, grave 24 5, Burger, A. 1966  
Sagvar, grave 247, Burger, A. 1966  
Sagvar, grave 314, Burger, A. 1966  
Sagvar, grave 317, Burger, A. 1966  
Trier, 4. 19, Loeschcke, S. 1925  
Trier, Abb. 4. 33, Loeschcke, S. 1925  
Trier, Abb. 1. 7, Loeschcke, S. 1925



### **Long black cylinder beads with trail decoration**

Augst, 2888, Riha, E. 1990  
Burgheim, grave 19 14, Keller, E. 1971  
Dunapentele, 107, Alföldi, M. 1957  
Dunapentele, 15, Alföldi, M. 1957  
Dunapentele, 56, Alföldi, M. 1957  
Sagvar, grave 131, Burger, A. 1966  
Sagvar, grave 178, Burger, A. 1966  
Sagvar, grave 286, Burger, A. 1966  
Trier doubtful provenance, , Abb. 4. 8, Loeschcke, S. 1925  
Virton, 8, Masséart, C. unpubl. excav

### **Cylinder beads with feather trail decoration**

Augst, 1232, Riha, E. 1990  
Girm, VB Oberpullendorf, grave 4 3a, Braun, T. 1991/2  
Dunapentele, 124, Alföldi, M. 1957  
Dunapentele, 56, Alföldi, M. 1957  
Keszthely-Dobogó, grave 99, Sagi, K. 1981  
Sagvar, grave 131, Burger, A. 1966  
Sagvar, grave 247, Burger, A. 1966  
Trier doubtful provenance, , Abb. 4. 8, Loeschcke, S. 1925  
Virton, 8, Masséart, C. unpubl. excav

## **BRACELETS**

### **CABLE BRACELETS MADE FROM STRANDS OF TWISTED WIRE**

#### **3strand cable bracelets with plain hook and eye fastening (dated to the 4th or 5th century)**

Augst, 2905, Riha, E. 1990  
Augst, 2921, Riha, E. 1990  
Burgheim, grave 5, Keller, E. 1971  
Chartres, sép. 619 C77. 6317. 3, Maison d'Archéologie, Chartres  
Colchester, 1628 BUC1, Crummy, N. 1983  
Dunapentele, 14, Alföldi, M. 1957  
Keszthely-Dobogó, grave 100 1, Sagi, K. 1981  
Krefeld-Gellep, grave 1036 2, Pirling, R. 1966  
Krefeld-Gellep, grave 464 6, Pirling, R. 1966  
Krefeld-Gellep, grave 1290 10, Pirling, R. 1974  
Lankhills, Winchester, SF 180, Clarke, G. 1976  
Mailly-le-Camp NW Trouan, 276, Ravaux, J. 1992  
Oudenburg, plate XXXII 4, Mertens, J. & Van Impe, L. 1971



Pfaffenhofen, grave 17, Keller, E. 1971

Potzham, grave4, Keller, E. 1971

Poundbury, 7 Ae99, Farwell, D. & Molleson, T. 1993

Strasbourg, 18824, Musée des Antiquités et d'Archéologie, Strasbourg

Strasbourg, 18826, Musée des Antiquités et d'Archéologie, Strasbourg

Strasbourg, 18828, Musée des Antiquités et d'Archéologie, Strasbourg

Strasbourg, 1883, Musée des Antiquités et d'Archéologie, Strasbourg

Strasbourg, 18928, Musée des Antiquités et d'Archéologie, Strasbourg

Valley, Taf 21, Keller, E. 1971

## **2 strand cable bracelets with plain hook & eye fastening (dated to the 4th or 5th century)**

Augst, 2917, Riha, E. 1990

Canterbury, 395, Blockley, K. et al, 1995

Frénouville, T. 354 1, Pilet, C. 1980

Keszthely-Dobogó, grave100 6b, Sagi, K. 1981

Köln, grave245, Friedhoff, U. 1991

Krefeld-Gellep, grave 1492 10, Pirling, R. 1974

Krefeld-Gellep, grave 1492 8, Pirling, R. 1974

Krefeld-Gellep, grave 3004 11, Pirling, R. 1989

Krefeld-Gellep, grave 3007 3, Pirling, R. 1989

Lankhills, Winchester, SF 259, Clarke, G. 1976

Lankhills, SF 111, Clarke, G. 1979

Mailly-le-Camp NW Trouan, 273, Ravaux, J. 1992

Mailly-le-Camp NW Trouan, 274, Ravaux, J. 1992

Shakenoak, 193, Brodribb, A. et al, 1973

Vermand, plate XIX 14, Eck, T. 1891

## **4 strand hook & eye bracelets with wrapped terminals**

Azlburg, Straubing, grave 11. Abb. 35, Menghin, W. 1990

Azlburg, Straubing, grave 11. Taf. 9.(2), Menghin, W. 1990

Basel, grave 298, Degen, R. 1957

Colchester, 52 6-26 33, British Museum

Dunapentele, 130, Alföldi, M. 1957

Krefeld-Gellep, grave 3007 1, Pirling, R. 1989

München, grave5 5, Keller, E. 1971

Neuburg an der Donau, grave 10 3, Keller, E. 1979

Pécs, R92-105. cat20, Fülep, F. 1977

Regensburg, grave 1115 Taf. 44 1, Von Schnurbein, S. 1977

Regensburg, grave 509 1, Von Schnurbein, S. 1977

Regensburg, Taf. 191 12, Von Schnurbein, S. 1977

Somogyzsil, grave1 1, Burger, A. 1979

Valley, Taf.21 13, Keller, E. 1971



Waltenberg, Taf.10 12, Keller, E. 1971

Wessling, grave12, Keller, E. 1971

#### **4 strand hook & eye bracelets probably wrapped terminals**

Augst, 2914, Riha, E. 1990

Augsburg, taf7 7, Keller, E. 1971

Burgheim, grave 24 10, Keller, E. 1971

Eining, taf47 3, Keller, E. 1971

Göggingen, grave5, Keller, E. 1971

Künzing-an-der- Donau, Abb. 1 9, Behling, 1964

München, grave 5 4, Keller, E. 1971

Valley, Taf.21 11, Keller, E. 1971

Valley, Taf.21 12, Keller, E. 1971

Wessling, grave 18 2, Keller, E. 1971

#### **2 strand cable bracelets with hook & eye fastening and wrapped terminals**

Canterbury, Cakebread Robey 983, Canterbury Arch.Trust

Keszthely-Dobogó, grave97 2, Sagi, K. 1981

Mautern an der Donau, erdbeSt. 1 2786b, Reidl, H. 1943

Pécs, grave R275 9, Fülep, F. 1977

Somogyzsil, grave 77 3, Burger, A. 1979

Somogyzsil, grave 77 4, Burger, A. 1979

Somogyzsil, grave 77 5, Burger, A. 1979

Somogyzsil, grave 93 4, Burger, A. 1979

St. Polten, taf16 10, Scherrer, P. 1991

St. Polten, Taf. 16 9, Scherrer, P. 1991

Avenches, pl. 8 27, Guisan, M. 1975 probably 2strand hook & eye bracelet with wrapped terminals

#### **2 strand cable bracelet with 2 hook fastening**

Lankhills, Winchester, SF 108, Clarke, G. 1976

Lankhills, Winchester, SF 143, Clarke, G. 1976

London, 83 4-4 5, British Museum

Vron, t. 167a 5, Seiller, C. unpublished

#### **3 strand cable bracelets with 2 hook fastening**

Cadbury Castle, fig. 2 7, Fox, A. 1952

Colchester, 55 10-18 8, British Museum

London, 96 5-1 14, British Museum

Lankhills, Winchester, SF 100, Clarke, G. 1976



Lankhills, Winchester, SF 102, Clarke, G. 1976  
 Lankhills, Winchester, SF 106, Clarke, G. 1976  
 Lankhills, Winchester, SF 113, Clarke, G. 1976  
 Lankhills, Winchester, SF 114, Clarke, G. 1976  
 Lankhills, Winchester, SF 179, Clarke, G. 1976  
 Lankhills, Winchester, SF 183, Clarke, G. 1976  
 Lankhills, Winchester, SF 185, Clarke, G. 1976  
 Lankhills, Winchester, SF 186, Clarke, G. 1976  
 Lankhills, Winchester, SF 238, Clarke, G. 1976  
 Lankhills, Winchester, SF 245, Clarke, G. 1976  
 Lankhills, Winchester, SF 246, Clarke, G. 1976  
 Lankhills, Winchester, SF 435 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 84F, Clarke, G. 1976  
 Mailly-le-Camp NW Trouan, 275, Ravaux, J. 1992  
 Tournai, no ref, Musée Archéologique, Tournai

#### **Bracelets made of strands of wire with threaded beads**

Atzgersdorf, 36330, RGZM illustrated in inventory book  
 Brunn am Gebirge, grave 5, Farka, C. 1976  
 München, grave 8 13, Keller, E. 1971  
 Regensburg, grave 509 1, Von Schnurbein, S. 1977  
 Sagvar, grave 328 1, Burger, A. 1966  
 Tongeren, grave 37 4, Vanvinckenroye, W. 1984  
 Wessling, grave 11 9, Keller, E. 1971

#### **STRIP BRACELETS WITH NOTCHED AND FACETED DECORATION**

##### **Strip bracelets with a1 decoration**

Aldborough, North Yorks. 292, Bishop, M. 1996  
 Aldborough, North Yorks. 294, Bishop, M. 1996  
 Aldborough, North Yorks. 299, Bishop, M. 1996  
 Amiens, pl.XVII 57, Canny, D. 1992  
 Bath, Avon, fig.12 43, Cunliffe, B.ed. 1988  
 Caernarfon (Segontium), 41, Allason-Jones, L. 1993  
 Caernarfon (Segontium), 42, Allason-Jones, L. 1993  
 Caernarfon (Segontium), 43, Allason-Jones, L. 1993  
 Caernarfon (Segontium), 44, Allason-Jones, L. 1993  
 Caister-by-Yarmouth, fig. 50 177, Darling, M. & Gurney, D. 1993  
 Camerton, near Bath, fig. 58 15, Wedlake, W. 1958  
 Canterbury, Cakebread Robey 330, Canterbury Archaeological Trust  
 Canterbury, St. Radygunds 499, Canterbury Archaeological Trust  
 Canterbury, 350, Blockley, K. et al, 1995



Canterbury, 357, Blockley, K. et al, 1995  
 Canterbury, 385, Blockley, K. et al, 1995  
 Cirencester, 45, Mackreth, D. 1982  
 Colchester, 1654 BUC213, Crummy, N. 1983  
 Colchester, 1655, Crummy, N. 1983  
 Colchester, 1656 BUC605, Crummy, N. 1983  
 Colchester, 1693 BUC2, Crummy, N. 1983  
 Conflans-sur-Seine, 19898, MAN St. Ger.  
 Dalheim, 1900-1/616, Mötefindt, H. 1925  
 Dragonby, North Lincolnshire, fig. 11. 197, May, J. 1996  
 Dunstable, grave G fig. 28 3, Matthews, C. 1981  
 Exeter, fig. 113 72, Holbrook, N. & Bidwell, P. 1991  
 Garenne-du-Roi, Oise, 28903, MAN St. Ger.  
 Glaston, Rutlandshire, fig. 1 2, Webster, G. 1950  
 Hechendorf, Taf. 37 7, Keller, E. 1971  
 Krefeld-Gellep, grave 2984 7, Pirling, R. 1989  
 Lankhills, Winchester, SF 196, Clarke, G. 1976  
 Lisieux, sép 201, Service d'Archéologie, Calvados  
 Pfaffenhofen, Taf. 18 9, Keller, E. 1971  
 Poundbury, 16 Ae112, Farwell, D. & Molleson, T. 1993  
 Rosport (Luxembourg), 1982-176/88, Musée d'Histoire et d'Art, Luxembourg  
 Sea Mills (Bristol/Glos.), fig. 2 15, Boon, G. 1945  
 Shakenoak, II 73, Brodribb, A. et al, 1971  
 Shakenoak, II 77, Brodribb, A. et al, 1971  
 Shakenoak, V 223, Brodribb, A. et al, 1978  
 South Shields, 3. 256, Allason-Jones, L. & Milet, R. 1984  
 Staines, fig. 24 6, Crouch, K. 1976  
 Tongeren, no.inv.(2), Gallo-Romeins Museum Tongeren  
 Tongeren, no.inv.(4), Gallo-Romeins Museum Tongeren  
 Uley, 11 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 15 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 4 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 7 fig 128, Woodward, A. & Leach, P. 1993  
 Valley, Taf. 22 4, Keller, E. 1971  
 Woodcuts Common, Rushmore Park, pl.XII fig. 3, Pitt-Rivers, W. 1887

**Strip bracelets with decoration related to a1; a23**

Dalheim, 1985-110/55, Mötefindt, H. 1925  
 Krefeld-Gellep, grave 2984 8, Pirling, R. 1989  
 Wittlich nr. Trier, inv.04, 238, Landesmuseum Trier

**Strip bracelets with decoration related to a1; a9**



Canterbury, 349, Blockley, K. et al, 1995  
Mont-Chyprés, Oise, 14425, MAN St. Ger.

**Strip bracelets with decoration related to a1; a37**

Regensburg, grave 1123 10, Von Schnurbein, S. 1977

**Strip bracelets with a2 decoration**

Altbachtal, nr. Trier, S.T. 11593, Rheinisches Landesmuseum Trier  
Altbachtal, nr. Trier, S.T. 12191, Rheinisches Landesmuseum Trier  
Ancaster, Lincs. fig. 60 3, Cool, H. 1983  
Beauvais, fig. 18 3, Schuler, R. 1995  
Caernarfon (Segontium), 38, Allason-Jones, L. 1993  
Caistor-by-Norwich, fig. 59 5, Cool, H. 1983  
Caister-by-Yarmouth, fig. 50 176, Darling, M. & Gurney, D. 1993  
Camerton, near Bath, fig. 57 1B, Wedlake, W. 1958  
Canterbury, fig. 62 4, Cool, H. 1983  
Canterbury, St. Radygunds 379, Canterbury Archaeological Trust  
Canterbury, Stour Street 313, Canterbury Archaeological Trust  
Canterbury, Stour Street Sk. 2 146, Canterbury Archaeological Trust  
Canterbury, Stour Street sk. 1 139, Canterbury Archaeological Trust  
Chartres, sép. 619 C77. 6317. 4, Maison d'Archéologie, Chartres  
Chartres, sép. 619 C77. 6317. 5, Maison d'Archéologie, Chartres  
Chartham, Kent, IA/96-35 173, Canterbury Archaeological Trust  
Chartham, Kent, IA/96-35 3, Canterbury Archaeological Trust  
Cirencester, fig. 62 5, Cool, H. 1983  
Cirencester, fig. 62 7, Cool, H. 1983  
Colchester, 1657 BUC38, Crummy, N. 1983  
Colchester, 1676 BUC388, Crummy, N. 1983  
Colchester, 1684 BKC5467, Crummy, N. 1983  
Colchester, fig. 62 3, Cool, H. 1983  
Colchester, fig. 63 2, Cool, H. 1983  
Colchester, 50 8-2 2, British Museum  
Dorchester, Dorset, fig. 61 7, Cool, H. 1983  
Dunapentele, grave 1221 4, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1236 2, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1236 3, Bóna, I. & Vágo, E. 1976  
Ewell, Surrey, 73 12-19 210, British Museum  
Farmoor, Oxfordshire, fig. 29 5, Lambrick, G. & Robinson, M. 1979  
Froitzheim, Kr.Duren, Bild 34 14, Barfield, L. 1968  
Glaston, Rutlandshire, fig. 1 3, Webster, G. 1950  
Göggingen, Taf. 9 6, Keller, E. 1971  
Great Chesterford, fig 60 5, Cool, H. 1983



Hemel Hempstead, fig LX 153, Neal, D. 1974  
 Hemel Hempstead, fig.LXIII 10, Neal, D. 1974/6  
 Hockwald-cum-Wilton, Norfolk, fig. 61 4, Cool, H. 1983  
 Icklingham, fig. 60 6, Cool, H. 1983  
 Icklingham, 54 4-12 36, British Museum  
 Keszthely-Dobogó, grave 110 6b, Sagi, K. 1981  
 Keszthely-Dobogó, grave 110 6d, Sagi, K. 1981  
 Keszthely-Dobogó, grave 110 6e, Sagi, K. 1981  
 Keszthely-Dobogó, grave 49 2, Sagi, K. 1981  
 Keszthely-Dobogó, grave 110 6c, Sagi, K. 1981  
 Köln, grave 250 2, Friedhoff, U. 1991  
 Köln, grave 250 3, Friedhoff, U. 1991  
 Köln, grave 296, Friedhoff, U. 1991  
 Köln doubtful provenance, 17747, RGZM  
 Köln doubtful provenance, 17750, RGZM  
 Köln, 13071, RGZM illustrated in inventory book  
 Lankhills, Winchester, SF 304, Clarke, G. 1976  
 Lauriacum (Enns), grave 32b 5, Vetters, H. & Karnitsch, P. et al, 1960  
 Leicester, 2, Kenyon, K. 1948  
 Luxembourg (no further prov), 1900-2/143, Musée d'Histoire et d'Art, Luxembourg  
 Mayen, grave 17 f, Habery, W. 1942  
 Northchurch, Bulbourne valley, fig.XI 8, Neal, D. 1974/6  
 Richborough, 13, Bushe-Foxe, J. 1949  
 Richborough, fig. 59 7, Cool, H. 1983  
 Richborough, fig. 60 1, Cool, H. 1983  
 Rochester, Kent, fig. 59 1, Cool, H. 1983  
 Rochester, Kent, fig. 95 2, Cool, H. 1983  
 Rochester, Kent, fig. 10 15, Cool, H. 1981  
 Rochester, Kent, fig. 10 16, Cool, H. 1981  
 Rochester, Kent, fig. 9 8, Cool, H. 1981  
 Shakenoak, 190, Brodribb, A.et al, 1973  
 Silchester, fig. 57 1, Cool, H. 1983  
 Silchester, fig. 59 3, Cool, H. 1983  
 Silchester, fig. 59 4, Cool, H. 1983  
 Silchester, fig. 59 6, Cool, H. 1983  
 Silchester, fig. 62 1, Cool, H. 1983  
 Somogyzsil, grave 34 8b, Burger, A. 1979  
 Springhead, fig. 5 5, Penn, W. 1962  
 Springhead, fig. 5 6, Penn, W. 1962  
 South Shields, 3. 227, Allason-Jones, L. & Miket, R. 1984  
 South Shields, 3. 236, Allason-Jones, L. & Miket, R. 1984  
 South Shields, 3. 237, Allason-Jones, L. & Miket, R. 1984



Strasbourg, 18883, Musée des Antiquités at d'archéologie, Strasbourg  
 Strasbourg, Taf. XXXIX 18879, Forrer, R. 1927  
 Tongeren, grave 22 10, Vanvinckenroye, W. 1984  
 Tongeren, grave 22 11, Vanvinckenroye, W. 1984  
 Uley, 19 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 5 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 6 fig 128, Woodward, A. & Leach, P. 1993  
 St. Albans, fig. 62 6, Cool, H. 1983  
 Vindolanda (Chesterholm), 42, Bidwell, P. 1985  
 Vindolanda (Chesterholm), 43, Bidwell, P. 1985  
 West Dean, Hants. fig. 61 5, Cool, H. 1983  
 Woodyates, pl.CLXXV fig. 10, Pitt-Rivers, W. 1892  
 Dunapentele, grave 1185 5, Bóna, I. & Vágo, E. 1976

#### **Strip bracelets with a5 decoration**

Augst, 538, Riha, E. 1990  
 Bletsoe, Bedfordshire, fig. 5. 45, Dawson, M. 1994  
 Froitzheim, Kr.Duren, Bild 34 13, Barfield, L. 1968  
 Hemel Hempstead, fig. 60 156, Neal, D. 1974  
 Gatcombe, W of Bristol, fig. 26 523, Branigan, K. 1977  
 Great Chesterford, fig. 66 7, Cool, H. 1983  
 Icklingham, fig. 66 6, Cool, H. 1983  
 Lankhills, Winchester, SF 141, Clarke, G. 1976  
 Silchester, fig. 66 8, Cool, H. 1983  
 South Shields, 2. 234, Allason-Jones, L. & Milet, R. 1984  
 South Shields, 3. 232, Allason-Jones, L. & Milet, R. 1984  
 South Shields, 3. 233, Allason-Jones, L. & Milet, R. 1984  
 South Shields, 3. 235, Allason-Jones, L. & Milet, R. 1984

#### **Strip bracelets with a13 decoration**

Colchester, 1688 BUC69, Crummy, N. 1983  
 Hemel Hempstead, fig. 60 159, Neal, D. 1974  
 Lankhills, Winchester, SF 251, Clarke, G. 1976  
 Lankhills, Winchester, SF 649, Clarke, G. 1976  
 Leicester, fig. 74 7, Cool, H. 1983  
 Uley, 28 779, Woodward, A. & Leach, P. 1993  
 Wiggonholt, Sussex, fig. 7 25, Evans, K. 1974  
 Wycomb, Andersford, Glos. fig. 12 3, Rawes, B. 1980

#### **Strip bracelets with a10 decoration**

Canterbury, 376, Blockley, K. et al, 1995  
 Icklingham, fig. 39 16, West, S. & Plouviez, J. 1976



Lydney, fig. 17 c, Wheeler, R.E.M. & Wheeler, T.V. 1932  
Lankhills, Winchester, SF 265, Clarke, G. 1976  
Regensburg, Taf. 190 9a, Von Schnurbein, S. 1977  
South Shields, 3. 239, Allason-Jones, L. & Milet, R. 1984

**Strip bracelets with decoration related to a10; a25**

Amiens, pl.XIX 67, Canny, D. 1992  
Augst, 539, Riha, E. 1990  
Augst, 540, Riha, E. 1990  
Chilgrove, Chichester, fig. 44 8, Down, A. 1979  
Lorenzberg bei Epfach, Taf. 39 17, Werner, J. 1969  
Silchester, fig. 68 6, Cool, H. 1983

**Strip bracelets with decoration related to a10; a4**

Canterbury, 365, Blockley, K. et al, 1995  
Colchester, 70 4-2 152, British Museum  
Eining, Taf. 47 2, Keller, E. 1971  
Icklingham, fig. 39 8, West, S. & Plouviez, J. 1976  
Pötzham, Taf. 31 2, Keller, E. 1971  
Silchester, fig. 67 1, Cool, H. 1983  
Silchester, fig. 69 4, Cool, H. 1983

**Strip bracelets with decoration related to a10; a45**

Richborough, fig. 68 1, Cool, H. 1983

**Strip bracelets with decoration related to a10; a47**

Canterbury, 366, Blockley, K. et al, 1995  
Chilgrove, Chichester, fig. 44 9, Down, A. 1979  
Guilden Morden, fig. 69 2, Cool, H. 1983

**Strip bracelets with a14 decoration**

St. Albans, fig. 55 6, Cool, H. 1983  
Basel, grave 300(1), Degen, R. 1957  
Brigstock, Northamptonshire, fig. 6 10, Greenfield, E. 1963  
Caerwent, fig. 55 7, Cool, H. 1983  
Caistor-by-Norwich, fig. 44 3, Cool, H. 1983  
Caston, Norwich, fig. 58 1, Cool, H. 1983  
Cirencester, 46, Mackreth, D. 1982  
Cirencester, fig. 60 7, Cool, H. 1983  
Icklingham, fig. 39 10, West, S. & Plouviez, J. 1976 probably a14  
Lankhills, Winchester, SF 163, Clarke, G. 1976



Lankhills, Winchester, SF 220, Clarke, G. 1976  
 Lydney, fig. 17 p, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Lydney, fig. 17 s, Wheeler, R.E.M. R.E.M. & Wheeler, T.V. 1932  
 Overton Down, Wilts. fig. 55 5, Cool, H. 1983  
 Overton Down, Wilts. fig. 58 2, Cool, H. 1983  
 Poundbury, 21 Ae110, Farwell, D. & Molleson, T. 1993  
 Poundbury, 22 Ae110, Farwell, D. & Molleson, T. 1993  
 Richborough, 15, Bushe-Foxe, J. 1949  
 Richborough, fig. 57 4, Cool, H. 1983  
 Richborough, fig. 57 5, Cool, H. 1983  
 Richborough, fig. 60 2, Cool, H. 1983  
 Shakenoak, 192, Brodribb, A. et al, 1973  
 Silchester, fig. 57 3, Cool, H. 1983  
 Silchester, fig. 58 5, Cool, H. 1983  
 Silchester, fig. 96 4, Cool, H. 1983  
 South Shields, 3. 242, Allason-Jones, L. & Milet, R. 1984  
 Uley, 10 fig 128, Woodward, A. & Leach, P. 1993  
 Woolaston, Glos, fig. 58 3, Cool, H. 1983

**Strip bracelets with decoration related to a14; a52**

Mildenhall, Wilts, fig. 75 9, Cool, H. 1983

**Strip bracelets with decoration related to a14; a16**

Lankhills, Winchester, SF 648, Clarke, G. 1976

**Strip bracelets with a39 decoration**

Azlbürg, Straubing, grave 11.Taf. 9.(3), Menghin, W. 1990  
 Conflans-sur-Seine, 19897, MAN St. Ger.  
 Conflans-sur-Seine, 19897(2), MAN St. Ger.  
 Illzach, D. 83. 6. 42, Musée Historique de Mulhouse  
 Lauriacum (Enns), grave 32b 6, Vetter, H. & Karnitsch, P. et al, 1960  
 Regensburg, grave 1115 2, Von Schnurbein, S. 1977  
 Regensburg, grave 1123 7, Von Schnurbein, S. 1977  
 Regensburg, Taf. 164 1, Von Schnurbein, S. 1977  
 Richborough, fig. 67 6, Cool, H. 1983  
 Rosport (Luxembourg), 1982-176/89, Musée d'Histoire et d'Art, Luxembourg  
 Sagvar, grave 331 3, Burger, A. 1966

**Strip bracelets with a34 decoration**

Cadbury Castle, fig. 2 6, Fox, A. 1952  
 Caerwent, fig. 59 2, Cool, H. 1983



Cirencester, 47, Mackreth, D. 1982  
Denton, Lincs, fig 58 8, Cool, H. 1983  
Gatcombe, W of Bristol, fig. 26 532, Branigan, K. 1977  
Lydney, fig. 17 57, Wheeler, R.E.M. & Wheeler, T.V. 1932  
Lydney, fig. 17 q, Wheeler, R.E.M. & Wheeler, T.V. 1932

**Strip bracelets with a8 decoration**

Villa d'Ancy, (Limé), Aisne, pl. 74 8 new ser, Moreau, F. 1887  
Augst, 2884, Riha, E. 1990  
Caernarfon (Segontium), 48, Allason-Jones, L. 1993  
Caister-by-Yarmouth, fig. 50 182, Darling, M. & Gurney, D. 1993  
Canterbury, Cakebread Robey 403, Canterbury Arch.Trust  
Cambridge, fig. 73 9, Cool, H. 1983  
Chichester, fig. 10. 38 104, Down, A. 1978 probably a8  
Cirencester, 51, Mackreth, D. 1982  
Guilden Morden, fig. 74 6, Cool, H. 1983  
Icklingham, fig. 74 8, Cool, H. 1983  
Obertraubling, Taf. 195 C1, Fischer, T. 1990  
Obertraubling, Taf. 49 7, Keller, E. 1971  
Poundbury, 20 Ae 110, Farwell, D. & Molleson, T. 1993  
Regensburg, grave 1123 9, Von Schnurbein, S. 1977  
Trier, inv. 14441, Rheinisches Landesmuseum Trier  
Uley, 12 fig 128, Woodward, A. & Leach, P. 1993  
Uley, 9 fig 128, Woodward, A. & Leach, P. 1993  
Vermand, plate XIX 10, Eck, T. 1891  
Woodyates, pl.CLXXXIII, Pitt-Rivers, W. 1892

**Strip bracelets with decoration related to a8; a12**

Eining, Taf. 47 4, Keller, E. 1971  
Canterbury, 367, Blockley, K. et al, 1995

**Strip bracelets with decoration related to a8; a19**

Matagne-la-Grande, fig. 15 63, Rober, R. 1983  
Oudenburg, plate III 8, Mertens, J. & Van Impe, L. 1971  
Portchester Castle, 31 1970, Cunliffe, B. et al, 1975

**Strip bracelets with alternate long facets**

St. Albans, fig. 75 8, Cool, H. 1983  
Canterbury, Cakebread Robey 52, Canterbury Arch.Trust  
Cirencester, fig. 75 4, Cool, H. 1983  
Cirencester, fig. 75 6, Cool, H. 1983  
Lydney, fig. 17 r, Wheeler, R.E.M. & Wheeler, T.V. 1932



## STRIP BRACELETS WITH PUNCHED CIRCLE & DOT DECORATION

### Strip bracelets with b1 decoration

Augst, 549, Riha, E. 1990

Augst, 2796, Riha, E. 1990

Caernarfon (Segontium), 47, Allason-Jones, L. 1993

Champlieu, fig. 244, Woimant, G. 1995

Colchester, 1708 BUC69, Crummy, N. 1983

Dunapentele, grave 1236 1, Bóna, I. & Vágo, E. 1976

Dunapentele, grave 1236 5b, Bóna, I. & Vágo, E. 1976

Gatcombe, W of Bristol, fig. 26 526, Branigan, K. 1977

Glaston, Rutlandshire, fig. 1 1, Webster, G. 1950

Hemel Hempstead, fig. 60 162, Neal, D. 1974

Krefeld-Gellep, grave 3008 12, Pirling, R. 1989

Luxembourg (no further prov), 1900-2/787, Musée d'Histoire et d'Art, Luxembourg

Lydney, fig. 17 e, Wheeler, R.E.M. & Wheeler, T.V. 1932

Poundbury, 11 Ae116, Farwell, D. & Molleson, T. 1993

Poundbury, 2 Ae69, Farwell, D. & Molleson, T. 1993

Somogyzsil, grave 37 3a, Burger, A. 1979

Springhead, fig. 5 1, Penn, W. 1962

Woodyates, pl.CLXXXIII, Pitt-Rivers, W. 1892

### Strip bracelets with b2 decoration

Augst, 2824, Riha, E. 1990

Augst, 550, Riha, E. 1990

Caernarfon (Segontium), 45, Allason-Jones, L. 1993

Caerwent, fig. 73 5, Cool, H. 1983

Canterbury, Cakebread Robey 328, Canterbury Arch.Trust

Edelstal, VB Neusiedl am See, Abb. 349, Adler, H.ed, 1988

Koern-Gondorf, 387, Schulze-Dörlamm, M. 1990

Dunapentele, 104, Alföldi, M. 1957

Dunapentele, 164, Alföldi, M. 1957

Kirchheim bei München, Abb. 6 13, Keller, E. 1989

Kirchheim bei München, Abb. 6 14, Keller, E. 1989

Lauriacum (Enns), grave 62neu 1, Vetters, H. & Karnitsch, P. et al, 1960

Lisieux, sép. 145, Service d'Archéologie, Calvados

Sagvar, grave 294 1, Burger, A. 1966

Sagvar, grave 300 1, Burger, A. 1966

Portchester Castle, 33 969, Cunliffe, B. et al, 1975



### **Strip bracelets decoration related to b2; b14**

Krefeld-Gellep, grave 3007 4, Pirling, R. 1989

Krefeld-Gellep, grave 3007 5, Pirling, R. 1989

Vron, t. 245a 3, Seiller, C. & unpublished

### **Strip bracelets with b3 decoration**

Augst, 2975, Riha, E. 1990

Borg.gem.Wald, inv.01, 140, Rheinisches Landesmuseum Trier

Cadbury Castle, fig. 2 2, Fox, A. 1952

Camerton, near Bath, fig. 57 9B, Wedlake, W. 1958

Cambridge, fig. 68 3, Cool, H. 1983

Chichester, fig. 5. 5 4, Down, A. 1974

Chilgrove, Chichester, fig. 44 5, Down, A. 1979

Chouy, Aisne, pl. 37 6 new ser, Moreau, F. 1884

Colchester, 1703 BKC712, Crummy, N. 1983

Colchester, 1704 BUC354, Crummy, N. 1983

Colchester, fig. 72 7, Cool, H. 1983

Colchester, fig. 73 1, Cool, H. 1983

Fôret de Compiègne, 28960(2), MAN St. Ger.

Dalheim, 1985-100/250, Musée d'Histoire et d'Art, Luxembourg

Dunstable, grave SS fig. 29 8, Matthews, C. 1981

Koborn-Gondorf, 386, Schulze-Dörlamm, M. 1990

Leicester, fig. 83 4, Kenyon, K. 1948

Canterbury, 382, Blockley, K. et al, 1995

Mont-Chyprés, Oise, 28883(c), MAN St. Ger.

Oudenburg, plate LXV 3, Mertens, J. & Van Impe, L. 1971

Poivres Champ-la-Cave, 445, Ravaux, R. 1992

Poundbury, 14 Ae 102, Farwell, D. & Molleson, T. 1993

Poundbury, 8 Ae100, Farwell, D. & Molleson, T. 1993

Poundbury, 9 Ae101, Farwell, D. & Molleson, T. 1993

Silchester, fig. 72 5, Cool, H. 1983

St. Albans, fig. 67 5, Cool, H. 1983

Vron, t. 245a 6, Seiller, C. unpublished

West Dean, Hants. fig. 68 4, Cool, H. 1983

Shakenoak, 191, Brodribb, A. et al. 1973

### **Strip bracelets with circle & dot separated by incised lines**

Brampton, Norfolk, fig. 72 1, Cool, H. 1983

Cadbury Castle, fig. 2 12, Fox, A. 1952

Caerwent, fig. 72 4, Cool, H. 1983

Dunapentele, grave 1236 4, Bóna, I. & Vágo, E. 1976

Lankhills, Winchester, SF 110, Clarke, G. 1976



Luxembourg (no further prov), 1900-2/782, Musée d'Histoire et d'Art, Luxembourg  
Mainz, 29635, RGZM, illustrated in inventory book  
Maters, Val Oise, 1629, RGZM illustrated in inventory book  
Richborough, 9, Bushe-Foxe, J. 1949  
Worms, 4798, RGZM, illustrated in inventory book

#### **Strip bracelets with b10 decoration**

Barnwood, near Gloucester, fig. 38, Clifford, E. 1930  
Caernarfon (Segontium), 46, Casey, P. & Davies, J. 1993  
Canterbury, Cakebread Robey 491, Canterbury Arch.Trust  
Champlieu, 14427, MAN St. Ger.  
Hemel Hempstead, fig. 60 155, Neal, D. 1974  
Woodeaton, Oxon, fig. 4 9, Kirk, J. 1949

#### **Strip bracelets with b13 decoration**

Burgheim, Taf. 15 13, Keller, E. 1971  
Eching, 16305, RGZM  
Eching, 7367, RGZM  
Eching, Taf. 19 4, Keller, E. 1971 may be same as above  
Eching, Taf. 19 5, Keller, E. 1971 may be same as above  
Krefeld-Gellep, grave 2985 14, Pirling, R. 1989  
Neuburg an der Donau, grave 39 2, Keller, E. 1979  
Regensburg, grave 1115 3, Von Schnurbein, S. 1977  
Tongeren, 2618, Gallo-Romeins Museum Tongeren

#### **Strip bracelets with b15 decoration**

Caistor-by-Norwich, fig. 70 4, Cool, H. 1983  
Chartham, Kent, IA/96-35 120, Canterbury Archaeological Trust  
Overton Down, Wilts. fig. 70 3, Cool, H. 1983  
Silchester, fig. 70 5, Cool, H. 1983  
Tournai, grave 67 4, Brulet, R. & Coulon, G. 1977  
St. Albans, fig. 32 34, Frere, S. 1972

#### **Strip bracelets with b16 decoration**

Augst, 551, Riha, E. 1990  
Bónaduz Switz. Lower Rhine, grave 138 Taf. 7 4, Schneider-Schnekenburger, G. 1980  
Chur, Taf. 49 16, Hochuli-Gysel, A. et al, 1986  
Köln, N3517, Römisch-Germanisches Museum, Köln  
Regensburg, F3 Taf. 161, Von Schnurbein, S. 1977  
Somogyzsil, grave 52 4b, Burger, A. 1979  
Spontin, grave E fig. 8 3, Dasnoy, A. 1965  
Tongeren, pl.VII. 32e, Vanvinckenroye, W. 1995



### **Bracelets with b31 & related decoration**

Bâalon, nr Stenay, Meuse, pl.XXXI 3, Liénard, F. 1885  
Fôret de Compiègne, 28960, MAN St. Ger.  
Damery, Marne, planche III 15, Brisson, A. et al, 1969  
Evreux, 539, Fauduet, I. 1992  
Köln, 280, Römisch-Germanisches Museum, Köln  
Otterfing, Taf. 46 4, Keller, E. 1971  
Silchester, fig. 73 6, Cool, H. 1983  
Vermand, plate XIX 5, Eck, T. 1891  
Vermand, plate XIX 8, Eck, T. 1891  
Tongeren, pl.VII 32 f, Vanvinckenroye, W. 1995

### **Strip bracelets with rosette motif**

Chartres, sép. 758 C77. 7309. 1, Maison d'Archéologie, Chartres  
Fôret de Compiègne, 28960(4), MAN St. Ger.  
Remagen, 13, Reauleux, 1885  
Remagen, 14, Reauleux, 1885  
Trier, ST. 2 108 a, Rheinisches Landesmuseum Trier  
Trier, inv. 18 909, Rheinisches Landesmuseum Trier  
Trier, inv. 33, 48, Rheinisches Landesmuseum Trier  
Trier doubtful provenance, no inv., Rheinisches Landesmuseum Trier

## **STRIP BRACELETS WITH OTHER TYPES OF DECORATION**

### **Strip bracelets with h3, H4 & h5 decoration related to b31 & rosette motif**

Köln, Abb. 44 8, Carroll-Spillecke, M. 1993  
Köln, Abb.44 9, Carroll-Spillecke, M. 1993  
Krefeld-Gellep, grave 1131 7, Pirling, R. 1966  
Krefeld-Gellep, grave 1131 8, Pirling, R. 1966  
Krefeld-Gellep, grave 3203 12, Pirling, R. 1989  
Krefeld-Gellep, grave 3203 11, Pirling, R. 1989

### **Strip bracelets with bands of horizontal lines**

Camerton, near Bath, fig. 57 3B, Wedlake, W. 1958  
Canterbury, Stour Street Sk. 3 138, Canterbury Archaeological Trust  
Chevrens, Ct.de Genève, fig. 3 , Reber, B. 1919  
Colchester, 1689 BUC388, Crummy, N. 1983  
Conflans-sur-Seine, 19899, MAN St. Ger.  
Köln doubtful provenance, 17748, RGZM  
Krefeld-Gellep, grave 3007 7, Pirling, R. 1989  
Lisieux, sp 818, Service d'Archéologie, Calvados



Luxembourg (no further prov), 1900-3/174, Musée d'Histoire et d'Art, Luxembourg  
Mont-Chyprés, Oise, 14425, MAN St. Ger.  
Niederbieber, nr. Bonn, 54, 4, Römisch Germanisches Museum Köln  
Obertraubling, 6152, RGZM illustrated in inventory book  
Overstone, Nhants. fig. 13 11, Williams, J. 1976  
Portchester Castle, 29 1012, Cunliffe, B. et al, 1975  
Portchester Castle, 30 213, Cunliffe, B. et al, 1975  
Tongeren, grave 96 15, Vanvinckenroye, W. 1984  
Vron, t. 201a 4, Seiller, C. unpublished

**Strip bracelets decorated with transverse lines within a border**

Ancaster, Lincs. fig. 64 6, Cool, H. 1983  
Caernarfon (Segontium), 40, Allason-Jones, L. 1993  
Canterbury, fig. 65 1, Cool, H. 1983  
Colchester, 1679 BUC388, Crummy, N. 1983  
Dunapentele, 146, Alföldi, M. 1957  
Dunapentele, 147, Alföldi, M. 1957  
Hockwald-cum-Wilton, Norfolk, fig. 64 8, Cool, H. 1983  
Icklingham, fig. 64 7, Cool, H. 1983  
Dunapentele, 149, Alföldi, M. 1957  
Keszthely-Dobogó, grave 107 4, Sagi, K. 1981  
Teffont Evias, Wilts. fig. 65 3, Cool, H. 1983  
Uley, 17 fig 128, Woodward, A. & Leach, P. 1993  
Uley, 24 243, Woodward, A. & Leach, P. 1993  
Vermand, plate XIX 26, Eck, T. 1891  
Vindolanda (Chesterholm), 41, Bidwell, P. 1985

**Strip bracelets with e2 decoration**

Azlborg, Straubing, grave 11 Abb. 35, Menghin, W. 1990  
Azlborg, Straubing, grave 11 Taf. 9, Menghin, W. 1990  
Beauvais, fig. 18 2, Schuler, R. 1995  
Canterbury, Cakebread Robey 799, Canterbury Archaeological Trust  
Colchester, 1653 BUC6, Crummy, N. 1983  
Canterbury, 364, Blockley, K. et al, 1995  
Marne (arbitrary point), 12773, MAN St. Ger.  
Silchester, fig. 67 4, Cool, H. 1983  
Valley, Taf. 22 1, Keller, E. 1971  
Vron, t. 265a 4, Seiller, C. unpublished

**Strip bracelets with d5 decoration**

Chartres, sép. 619 C77. 6317. 2, Maison d'Archéologie, Chartres  
Chesterton, Oxon. fig. 50 3, Cool, H. 1983



Evreux, 530, Fauduet, I. 1992  
Ham Hill, fig. 44 2, Cool, H. 1983  
Hechendorf, Taf. 37 4, Keller, E. 1971  
Richborough, 6, Bushe-Foxe, J. 1949

**Strip bracelets with decoration related to d5; d6**

Brampton, Norfolk, fig. 50 1, Cool, H. 1983  
Caerleon, fig. 8 33, Fox, A. 1940  
Chevrens, Ct.de Genève, fig. 3(1), Reber, B. 1919  
Great Chesterford, fig. 49 3, Cool, H. 1983  
London, fig. 49 2, Cool, H. 1983  
Uley, 13 fig 128, Woodward, A. & Leach, P. 1993

**Strip bracelets with f1 decoration**

Caerwent, fig. 71 5, Cool, H. 1983  
Canterbury, Cakebread Robey 113, Canterbury Archaeological Trust  
Cirencester, 52, Mackreth, D. 1982  
Garenne-du-Roi, Oise, 13953(2), MAN St. Ger.  
Gersheim, Bad Freib. 4092, RGZM, illustrated in inventory book  
Icklingham, fig. 61 6, Cool, H. 1983  
Icklingham, British Museum  
Lankhills, Winchester, SF 313, Clarke, G. 1976  
Northern France (arbitrary point), no inv no.(Moreau coll.) MAN St. Ger.  
Portchester Castle, 32 1154, Cunliffe, B. et al, 1975  
Tongeren, grave 12 5, Vanvinckenroye, W. 1970  
Vermand, plate XIX 15, Eck, T. 1891

**Strip bracelets with g2 decoration**

Caister-by-Yarmouth, fig. 50 184, Darling, M. & Gurney, D. 1993  
Canterbury, Cakebread Robey 173, Canterbury Archaeological Trust  
Canterbury, Cakebread Robey 255, Canterbury Archaeological Trust  
Colchester, 1714 BUC999, Crummy, N. 1983  
Richborough, 4, Bushe-Foxe, J. 1949  
Rochester, Kent, fig. 10 12, Cool, H. 1981  
Rochester, Kent, fig. 10 13, Cool, H. 1981

**Bracelets with multiple motif decoration**

Abingdon, fig. 80 1, Cool, H. 1983  
Amiens, pl.XIX 65, Canny, D. 1992  
Ashley Camp, Ashley, Hants. fig. 92 3, Cool, H. 1983



Augst, 2875, Riha, E. 1990  
 Bath, Avon, fig. 89 10, Cool, H. 1983  
 Bernex G.E (kanton) Schweiz, fig. 21, Drack, W. 1966/7  
 Cadbury Castle, fig. 2 11, Fox, A. 1952  
 Cadbury Castle, fig. 2 8, Fox, A. 1952  
 Caerwent, fig. 63 5, Cool, H. 1983  
 Caistor-by-Norwich, fig. 85 5, Cool, H. 1983  
 Canterbury, Cakbread Robey 296, Canterbury Archaeological Trust  
 Camerton, near Bath, fig. 58 7b, Wedlake, W. 1958  
 Canterbury, fig. 90 4, Cool, H. 1983  
 Canterbury, 368, Blockley, K.et al, 1995  
 Canterbury, 369, Blockley, K.et al, 1995  
 Canterbury, 371, Blockley, K.et al, 1995  
 Canterbury, 374, Blockley, K.et al, 1995  
 Canterbury, 375, Blockley, K.et al, 1995  
 Canterbury, 383, Blockley, K.et al, 1995  
 Canterbury, Stour Street 312, Canterbury Archaeological Trust  
 Chartres, sép. 776 C77. 7409. 1, Maison d'Archéologie, Chartres  
 Chartres, sép. 392 C. 73. 4224. Maison d'Archéologie, Chartres  
 Chartres, sép. 392 C73. 4224. 4, Maison d'Archéologie, Chartres  
 Chilgrove, Chichester, fig. 44 2, Down, A. 1979  
 Cirencester, fig. 84 2, Cool, H. 1983  
 Cirencester, fig. 85 1, Cool, H. 1983  
 Cirencester, fig. 85 3, Cool, H. 1983  
 Cirencester, fig. 90 2, Cool, H. 1983  
 Colchester, 1724 BKC1294, Crummy, N. 1983  
 Colchester, 1725 BUC388, Crummy, N. 1983  
 Colchester, 1726 BUC457, Crummy, N. 1983  
 Colchester, 1729 BUC457, Crummy, N. 1983  
 Colchester, 1730 BUC605, Crummy, N. 1983  
 Colchester, 1731 BUC1548, Crummy, N. 1983  
 Colchester, 1732 IRB46, Crummy, N. 1983  
 Colchester, fig. 79 1, Cool, H. 1983  
 Colchester, fig. 79 2, Cool, H. 1983  
 Colchester, fig. 79 3, Cool, H. 1983  
 Colchester, fig. 81 3, Cool, H. 1983  
 Colchester, fig. 83 4, Cool, H. 1983  
 Dormagen (lower Rhine), Taf. 24 19, Müller, G. 1979  
 Dunwich, Suffolk, fig. 84 3, Cool, H. 1983  
 Feltwell, Norfolk, fig. 80 3, Cool, H. 1983  
 Gatcombe, W of Bristol, fig. 27 527, Branigan, K. 1977  
 Gatcombe, W of Bristol, fig. 27 534, Branigan, K. 1977



Great Chesterford, fig. 92 2, Cool, H. 1983

Great Dunmow, fig. 81 2, Cool, H. 1983

Icklingham, fig. 71 9, Cool, H. 1983

Krefeld-Gellep, grave 594 10, Pirling, R. 1966

Krefeld-Gellep, grave 594 11, Pirling, R. 1966

Krefeld-Gellep, grave 594 9, Pirling, R. 1966

Krefeld-Gellep, grave 1274 11, Pirling, R. 1974

Krefeld-Gellep, grave 1335 1, Pirling, R. 1974

Krefeld-Gellep, grave 3007 2, Pirling, R. 1989

Lankhills, Winchester, SF 107, Clarke, G. 1976

Lankhills, Winchester, SF 147, Clarke, G. 1976

Lankhills, Winchester, SF 148, Clarke, G. 1976

Lankhills, Winchester, SF 303, Clarke, G. 1976

Lankhills, Winchester SF 370 grave 326, Clarke, G. 1976

Lankhills, Winchester, SF 393 grave 351, Clarke, G. 1976

Lankhills, Winchester, SF 394 grave 351, Clarke, G. 1976

Lankhills, Winchester, SF 456, Clarke, G. 1976

Lankhills, Winchester, SF 502 grave 396, Clarke, G. 1976

Lankhills, Winchester, SF 525, Clarke, G. 1976

Lankhills, Winchester SF 650, Clarke, G. 1976

Leicester, fig. 78 4, Cool, H. 1983

Leicester, fig. 96 2, Cool, H. 1983

Lincoln, 66 12-3 188, British Museum

Lisieux, sp. 97, Service d'Archéologie, Calvados

Luxembourg (no further prov), 1900-2/786, Musée d'Histoire et d'Art, Luxembourg

Luxembourg (no further prov), 1900-3/618, Musée d'Histoire et d'Art, Luxembourg

Lydney, fig. 17 a, Wheeler, R.E.M. & Wheeler, T.V. 1932

Lydney, fig. 17 d, Wheeler, R.E.M. & Wheeler, T.V. 1932

Lydney, fig. 17 g, Wheeler, R.E.M. & Wheeler, T.V. 1932

Lydney, fig. 17 h, Wheeler, R.E.M. & Wheeler, T.V. 1932

Lydney, fig. 17 j, Wheeler, R.E.M. & Wheeler, T.V. 1932

Lydney, fig. 17 k, Wheeler, R.E.M. & Wheeler, T.V. 1932

Monkton, Thanet, MP/94 2340, Canterbury Archaeological Trust

Mont-Chyprés, Oise, 14425, MAN St. Ger.

Mont-Chyprés, Oise, 28883, MAN St. Ger.

Northern France (arbitrary point), 38226, MAN St. Ger.

Noyelles-sur-mer, Baie de Somme, sép. 14 2, Piton, D. & Marchand, H. 1978

Portchester Castle, 36 69, Cunliffe, B. et al, 1975

Portchester Castle, 37 1147, Cunliffe, B. et al, 1975

Portchester Castle, 38 140, Cunliffe, B. et al, 1975

Poundbury, 18 Ae112, Farwell, D. & Molleson, T. 1993

Poundbury, 19 Ae112, Farwell, D. & Molleson, T. 1993



Remagen, 12, Reauleux, 1885  
 Renansart, S.e du canton Ribemont, 2ème planche. 5, Pilloy, J. 1886  
 Richborough, fig. 76 5, Cool, H. 1983  
 Richborough, fig. 76 6, Cool, H. 1983  
 Richborough, fig. 81 4, Cool, H. 1983  
 Richborough, fig. 82 3, Cool, H. 1983  
 Richborough, fig. 90 6, Cool, H. 1983  
 Rochester, Kent, fig. 50 2, Cool, H. 1983  
 Rouffy, Marne, 13287, MAN St. Ger.  
 Rushall Down, Wilts. fig. 84 1, Cool, H. 1983  
 Samson, Namur, grave 8 2, Dasnoy, A. 1969  
 Samson, Namur, grave 8 3, Dasnoy, A. 1969  
 Shakenoak, I 20, Brodribb, A.et al, 1968  
 Shakenoak, I 21, Brodribb, A.et al, 1968  
 Shakenoak, I 22, Brodribb, A.et al, 1968  
 Shakenoak, 194, Brodribb, A.et al, 1973  
 Shakenoak, 200-202, Brodribb, A.et al, 1973  
 Shakenoak, V 230, Brodribb, A.et al, 1978  
 Shernbourne, Norfolk, fig. 82 1, Cool, H. 1983  
 Silchester, fig. 65 5, Cool, H. 1983  
 Silchester, fig. 78 2, Cool, H. 1983  
 Silchester, fig. 85 4, Cool, H. 1983  
 Silchester, fig. 85 6, Cool, H. 1983  
 Silchester, fig. 90 1, Cool, H. 1983  
 Silchester, fig. 90 3, Cool, H. 1983  
 Springhead, fig. 5 3, Penn, W. 1962  
 Springhead, fig. 5 4, Penn, W. 1962  
 South Shields, 3. 223, Allason-Jones, L. & Miket, R. 1984  
 Steeple Aston, fig. 81 1, Cool, H. 1983  
 Tongeren, B873, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, B875, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, 1/0510, Musée Curtius, Liège  
 Trier, inv. 1 972, Rheinisches Landesmuseum Trier  
 Uley, 2 fig 129, Woodward, A. & Leach, P. 1993  
 Uley, 3 fig 129, Woodward, A. & Leach, P. 1993  
 Upper Upham, fig. 91 2, Cool, H. 1983  
 Upper Upham, fig. 91 3, Cool, H. 1983  
 St. Albans, fig. 10 69, Frere, S. 1984  
 St. Albans, fig. 32 32, Frere, S. 1972  
 St. Albans, fig. 89 11, Cool, H. 1983  
 Vron, t. 201a 5, Seiller, C. unpublished  
 Winchester, fig. 80 2, Cool, H. 1983



Woodeaton, Oxon, fig. 4 14, Kirk, J. 1949  
 Woodeaton, Oxon, fig. 5 14, Kirk, J. 1949  
 Wroxeter (Uriconium), fig. 80 4, Cool, H. 1983  
 Wycomb, Andersford, Glos. fig. 12 8, Rawes, B. 1980

#### **Multiple motif bracelets with snakeshead or penannular terminals**

Canterbury, Stour Street 312, Canterbury Archaeological Trust  
 Lankhills, Winchester, SF 456, Clarke, G. 1976  
 Lankhills, Winchester, SF 502 grave 396, Clarke, G. 1976  
 Northern France, 38226, MAN St. Ger.  
 Rochester, Kent, fig. 50 2, Cool, H. 1983  
 Shernbourne, Norfolk, fig. 82 1, Cool, H. 1983  
 Tongeren, 1/0510, Musée Curtius, Liège  
 Upper Upham, fig. 91 2, Cool, H. 1983  
 Upper Upham, fig. 91 3, Cool, H. 1983

#### **HOLLOW BRACELETS**

##### **All hollow bracelets**

Chartres, sép. 765 C77. 7382. 3, Maison d'Archéologie, Chartres  
 Colchester, 70 4-2 127, British Museum  
 Göggingen, Taf. 9 3, Keller, E. 1971  
 Dunapentele, grave 1126 4, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1185 7, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1185 4, Bóna, I. & Vágo, E. 1976  
 Dunapentele, 34, Alföldi, M. 1957  
 Dunapentele, 108, Alföldi, M. 1957  
 Dunapentele, 118, Alföldi, M. 1957  
 Dunapentele, 128, Alföldi, M. 1957  
 Dunapentele, 134, Alföldi, M. 1957  
 Dunapentele, 184, Alföldi, M. 1957  
 Keszthely-Dobogó, grave 73 8, Sági, K. 1981  
 Krefeld-Gellep, grave 2972 10, Pirling, R. 1989  
 Lauriacum (Enns), Abb. 63 N, Schicker, J. 1933  
 Lauriacum (Enns), Abb. 65 S, Schicker, J. 1933  
 Neuburg an der Donau, grave 10 2, Keller, E. 1979  
 Pfaffenhofen, Taf. 18 13, Keller, E. 1971  
 Rochester, Kent, fig. 10 15, Cool, H. 1981  
 Sagvar, grave 328 4a, Burger, A. 1966  
 Sagvar, grave 328 4b, Burger, A. 1966  
 Sagvar, grave 330 3, Burger, A. 1966  
 Schaanwald, Liechtenstein, Taf. 38 5, Overbeck, B. 1982



Sommerein an Leithagebirge, grave VI, Menghin, O. & Seracsin, A. 1929  
 Somogyzsil, grave 1 6, Burger, A. 1979  
 Somogyzsil, grave 38 3a, Burger, A. 1979  
 Somogyzsil, grave 38 3b, Burger, A. 1979  
 Somogyzsil, grave 40 3k, Burger, A. 1979  
 Somogyzsil, grave 40 3l, Burger, A. 1979  
 Somogyzsil, grave 40 3m, Burger, A. 1979  
 Somogyzsil, grave 52 4a, Burger, A. 1979  
 Somogyzsil, grave 80 7, Burger, A. 1979  
 Somogyzsil, grave 80 8, Burger, A. 1979  
 Somogyzsil, grave 88 1, Burger, A. 1979  
 Somogyzsil, grave 89 6, Burger, A. 1979  
 Strasbourg, Taf. XXXIX18887, Forrer, R. 1927  
 Uley, N.ill, P. 164, Woodward, A. & Leach, P. 1993  
 Weilheim, Taf. 45 4, Keller, E. 1971

#### **Undecorated hollow bracelets with fixed fastening**

Dunapentele, grave 1126 4, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 1185 4, Bóna, I. & Vágo, E. 1976  
 Somogyzsil, grave 38 3a, Burger, A. 1979  
 Somogyzsil, grave 38 3b, Burger, A. 1979  
 Somogyzsil, grave 40 3k, Burger, A. 1979  
 Somogyzsil, grave 40 3l, Burger, A. 1979

#### **Undecorated hollow bracelets with penannular terminals**

Keszthely-Dobogó, grave 73 8, Sagi, K. 1981  
 Lauriacum (Enns), Abb. 63 N, Schicker, J. 1933  
 Lauriacum (Enns), Abb. 65 S, Schicker, J. 1933  
 Neuburg an der Donau, grave 10 2, Keller, E. 1979  
 Somogyzsil, grave 1 6, Burger, A. 1979  
 Somogyzsil, grave 40 3m, Burger, A. 1979

#### **Hollow bracelets with penannular terminals incised with tranverse grooves**

Sagvar, grave 328 4a, Burger, A. 1966  
 Sagvar, grave 330 3, Burger, A. 1966  
 Somogyzsil, grave 80 7, Burger, A. 1979  
 Somogyzsil, grave 80 8, Burger, A. 1979

#### **SNAKESHEAD BRACELETS**

##### **Snakeshead bracelets with type 1 terminals**

Canterbury, Stour Street 312, Canterbury Archaeological Trust



Great Dunmow, fig. 42 3, Cool, H. 1983  
 Krefeld-Gellep, grave 597 12, Pirling, R. 1966  
 Lankhills, Winchester, SF 502 grave 396, Clarke, G. 1976  
 Lankhills, Winchester, SF 561, Clarke, G. 1976  
 Mildenhall, Wilts, fig. 42 2, Cool, H. 1983  
 Oudenburg, plate XXVI 1, Mertens, J. & Van Impe, L. 1971  
 Tongeren, 1/0510, Musée Curtius, Liège  
 Upper Upham, fig. 42 1, Cool, H. 1983

#### **Snakeshead bracelets with type 10 terminals**

Altenstadt, Taf. 32 3, Keller, E. 1971 probably type 10  
 Altenstadt, Taf. 33 11, Keller, E. 1971 probably type 10  
 Altenstadt, Taf. 32 6, Keller, E. 1971  
 Bónaduz Switz. Lower Rhine, grave 114 Taf. 6 11, Schneider-Schnekenburger, G. 1980  
 Calfriesen, Kr.Schanfigg, Taf. 42 2, Overbeck, B. 1982 probably type 10  
 Chur, Taf. 20 1, Schneider-Schnekenburger, G. 1980  
 Chur, Taf. 20 2, Schneider-Schnekenburger, G. 1980  
 Conflans-sur-Seine, 19899, MAN St. Ger.  
 Eining, Taf. 47 1, Keller, E. 1971  
 Eining, Taf. 47 8, Keller, E. 1971  
 Lauriacum (Enns), Taf. LII 1, Kloiber, A. 1962  
 Lauriacum (Enns), tLII 3, Kloiber, A. 1962  
 Lauriacum (Enns), grave 23 1, Vetters, H. & Karnitsch, P. et al. 1960  
 Lauriacum (Enns), grave 31a 2, Vetters, H. & Karnitsch, P. et al. 1960  
 Lauriacum (Enns), grave 32b 4, Vetters, H. & Karnitsch, P. et al. 1960  
 Lauriacum (Enns), grave 62 2, Vetters, H. & Karnitsch, P. et al. 1960  
 Lauriacum (Enns), grave 62 5, Vetters, H. & Karnitsch, P. et al. 1960  
 Lorenzberg bei Epfach, Taf. 39 20, Werner, J. 1969  
 Maising, Taf. 37 10, Keller, E. 1971  
 München, Taf. 25 1, Keller, E. 1971  
 Neuburg an der Donau, grave 39 1, Keller, E. 1979  
 Neuburg an der Donau, grave 54 10, Keller, E. 1979  
 Neuburg an der Donau, grave 54 11, Keller, E. 1979  
 Redl, Taf. 20 10, Keller, E. 1971  
 Redl, Taf. 20 11, Keller, E. 1971  
 Redl, Taf. 20 4, Keller, E. 1971  
 Redl, Taf. 20 9, Keller, E. 1971  
 Regensburg, Taf. 180 10a, Von Schnurbein, S. 1977  
 Regensburg, Taf. 180 10b, Von Schnurbein, S. 1977  
 Salzburg, fig. 5, Hell, M. 1909  
 Sommerein an Leithagebirge, grave VI n.ill, Menghin, O. & Seracsin, A. 1929  
 Sommerein an Leithagebirge, grave XI n.ill, Menghin, O. & Seracsin, A. 1929



St. Polten, Taf. 16 11, Scherrer, P. 1991  
St. Polten, Taf. 16 13, Scherrer, P. 1991  
Tamins Switz. grave 1964/1 Taf. 22, Schneider-Schnekenburger, G. 1980  
Valley, Taf. 23 4, Keller, E. 1971  
Wessling, Taf. 41 4, Keller, E. 1971  
Valley, Taf. 22 2, Keller, E. 1971 probably type 10

#### **Snakeshead bracelets with type 12 terminals**

Basel, grave 300(3), Degen, R. 1957  
Basel, grave 300(4), Degen, R. 1957  
Briarres-sur-Essone, canton Puiseaux, Abb17 5, Zeiss, H. 1941  
Colchester, 1684 BKC5467, Crummy, N. 1983  
Dorchester, Dorset, fig. 41 5, Cool, H. 1983  
Dunapentele, grave 1150 3, Bóna, I. & Vágo, E. 1976  
Dunapentele, 176, Alföldi, M. 1957  
Evreux, 530, Fauduet, I. 1992  
Illzach, D. 83. 6. 42, Musée Historique de Mulhouse  
Lampertheim am Rhein, Taf. 47 Abb. 242, Koch, A. 1937  
Mont-Chyprés, Oise, 28883, MAN St. Ger  
Northern France (arbitrary point), 38226, MAN St. Ger.  
Oudenburg, plate III 7, Mertens, J. & Van Impe, L. 1971  
Strood, Kent, fig. 41 1, Cool, H. 1983  
Tongeren, 1/01068, Musée Curtius, Liège

#### **Snakeshead bracelets with type 36 terminals**

Colchester, fig. 62 3, Cool, H. 1983  
Lauriacum (Enns), grave 80 1, Vetters, H. & Karnitsch, P. et al, 1960  
Neuburg an der Donau, grave 106 2, Keller, E. 1979  
Sagvar, grave 302 2, Burger, A. 196  
Somogyzsil, grave 145 5, Burger, A. 1979 probably type 36  
Somogyzsil, grave 21 2b, Burger, A. 1979  
Somogyzsil, grave 25 4a, Burger, A. 1979 probably type 36  
Somogyzsil, grave 38 2b, Burger, A. 1979  
Somogyzsil, grave 77 6, Burger, A. 1979

#### **Snakeshead bracelets with type 18 terminals**

Grödig bei Salzburg, grave 1 1, Hell, M. 1959  
St. Polten, Taf. 17 16, Scherrer, P. 1991  
Somogyzsil, grave 20 1, Burger, A. 1979  
Somogyzsil, grave 34 6a, Burger, A. 1979 probably type 18  
Somogyzsil, grave 67 2, Burger, A. 1979  
Somogyzsil, grave 80 10, Burger, A. 1979 probably type 18



Somogyzsil, grave 96 5, Burger, A. 1979

**Snakeshead bracelets with terminals related to 18; type 68 terminals**

Dunapentele, 140, Alföldi, M. 1957, 68

**Snakeshead bracelets with type 23 terminals**

Deutschkreutz, Oberpullendorf, Abb. 673, Adler, H. 1982

Hungary (arbitrary point) doubtful provenance, 2105, RGZM

Dunapentele, 22, Alföldi, M. 1957

Dunapentele, 33, Alföldi, M. 1957

Dunapentele, 150, Alföldi, M. 1957

Lauriacum (Enns), Abb. 65 E, Schicker, J. 1933

Lauriacum (Enns), Abb. 65 W, Schicker, J. 1933

Lauriacum (Enns), grave 16a 3, Vetters, H. & Karnitsch, P. et al, 1960

Lauriacum (Enns), grave 16a, 13, Vetters, H. & Karnitsch, P. et al, 1960

Lauriacum (Enns), grave 67 1, Vetters, H. & Karnitsch, P. et al, 1960

Petronell (Carnuntum), Taf. 23 18, Grünwald, M. 1947

Somogyzsil, grave 137 2, Burger, A. 1979

Somogyzsil, grave 21 2a, Burger, A. 1979

Somogyzsil, grave 25 4b, Burger, A. 1979

Somogyzsil, grave 43 2, Burger, A. 1979

Somogyzsil, grave 69 9, Burger, A. 1979

Sagvar, grave 283 2a, Burger, A. 1966

**Snakeshead bracelets with terminals related to 23; type 34 terminals**

Arbon TG, Taf. 45 10, Overbeck, B. 1982

Sagvar, grave 265 4, Burger, A. 1966 probably type 34

**Snakeshead bracelets with terminals related to 23; type 65 terminals**

Dunapentele, grave 1005 3, Bóna, I. & Vágo, E. 1976

Dunapentele, 131, Alföldi, M. 1957

Dunapentele, 218, Alföldi, M. 1957

Sagvar, grave 252 4, Burger, A. 1966

**Snakeshead bracelets with terminals related to 23; type 101 terminals**

Dunapentele, grave 134 1, Bóna, I. & Vágo, E. 1976

Tokod, grave 27, Mócsy, A. 1981

**Snakeshead bracelets with type 28 terminals**

Altenstadt, Taf. 32 7, Keller, E. 1971

Berschis, nr Flums, Bez.Sargans, Taf. 32 2, Overbeck, B. 1982

Caistor-by-Norwich, fig. 44 3, Cool, H. 1983



Chur, Taf. 14 4, Overbeck, B. 1982  
Fussen Bad Fulenbach, Taf. 11 2, Keller, E. 1971  
Lorenzberg bei Epfach, Taf. 39 19, Werner, J. 1969  
Oudenburg, plate LIX 7, Mertens, J. & Van Impe, L. 1971  
Wilzhofen, Taf. 45 6, Keller, E. 1971

**Snakeshead bracelets with type 105 terminals**

Dunapentele, grave 1186 3, Bóna, I. & Vágo, E. 1976  
St. Polten, Taf. 17 17, Scherrer, P. 1991

**Snakeshead bracelets with type 93 terminals**

Donnerskirchen, Eisenstadt-Umgebung, Abb. 442, Adler, ed. 1985/6  
Dunapentele, grave 1005 2, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave 1179 3, Bóna, I. & Vágo, E. 1976  
Göggingen, Taf. 8 5, Keller, E. 1971  
Künzing, Taf. 50 8, Keller, E. 1971  
Künzing-an-der-Donau, Abb. 1 10, Behling, U. 1964  
Lauriacum (Enns), grave 16a 14, Vetters, H. & Karnitsch, P. et al, 1960  
Lauriacum (Enns), grave 32b 3, Vetters, H. & Karnitsch, P. et al, 1960  
Sagvar, grave 201 6, Burger, A. 1966  
Sagvar, grave 261 3, Burger, A. 1966  
Sagvar, grave 50 1, Burger, A. 1966  
Sagvar, grave 283 2d, Burger, A. 1966  
Sagvar, grave 43 1, Burger, A. 1966

**Snakeshead bracelets with type 55 terminals**

Grünwald, Taf. 29 3, Keller, E. 1971  
Dunapentele, 59, Alföldi, M. 1957  
Dunapentele, 60, Alföldi, M. 1957  
Dunapentele, 65, Alföldi, M. 1957  
Dunapentele, 74, Alföldi, M. 1957  
Dunapentele, 194, Alföldi, M. 1957  
Sagvar, grave 265 5, Burger, A. 1966

**Snakeshead bracelets with type 42 terminals**

Dunapentele, grave . 1008 3, Bóna, I. & Vágo, E. 1976  
Dunapentele, grave . 1050 1, Bóna, I. & Vágo, E. 1976 (probably 42)  
Dunapentele, 156, Alföldi, M. 1957  
Mintraching (Umland Regensburg), Taf. 180 D1, Fischer, T. 1990  
Sagvar, grave . 169 3, Burger, A. 1966 (probably 42)  
Sagvar, grave . 66 2, Burger, A. 1966  
Somogyzsil, grave 143 2, Burger, A. 1979



Somogyzsil, grave 145 4, Burger, A. 1979  
Somogyzsil, grave 69 6, Burger, A. 1979  
Somogyzsil, grave 96 6, Burger, A. 1979 (probably 42)  
Tokod, grave 104/5, Mócsy, A. 1981

**Snakeshead bracelets with type 31 terminals**

Dunapentele, grave 1008 2, Bóna, I. & Vágo, E. 1976  
Krefeld-Gellep, grave 1492 11, Pirling, R. 1974  
Lorenzberg bei Epfach, Taf. 39 21, Werner, J. 1969  
Sagvar, grave 27 2, Burger, A. 1966  
Somogyzsil, grave 108 1, Burger, A. 1979

**Snakeshead bracelets with square or rectangular ends and two punched circle & dot motifs**

St. Albans, fig. 45 43, Wheeler, R. & Wheeler, T. 1936  
Dunapentele, 1, Alföldi, M. 1957  
Dunapentele, 4, Alföldi, M. 1957  
Dunapentele, 5, Alföldi, M. 1957  
Dunapentele, 8, Alföldi, M. 1957  
Dunapentele, 11, Alföldi, M. 1957  
Dunapentele, 21, Alföldi, M. 1957  
Dunapentele, 115, Alföldi, M. 1957  
Dunapentele, 154, Alföldi, M. 1957  
Dunapentele, 180, Alföldi, M. 1957  
Dunapentele, 199, Alföldi, M. 1957  
Lauriacum (Enns), grave 43 5, Vetters, H. & Karnitsch, P. et al, 1960  
Sagvar, grave 169 1, Burger, A. 1966  
Sagvar, grave 197 4, Burger, A. 1966  
Sagvar, grave 93 1, Burger, A. 1966  
Somogyzsil, grave 80 9, Burger, A. 1979  
Tokod, grave 96, Mócsy, A. 1981  
Sagvar, grave 212 11, Burger, A. 1966



## OTHER SOLID BRACELETS

### Undecorated bracelets with expanding fastening (4th & 5th century contexts)

- St. Albans, fig. 32 35, Frere, S. 1972
- Augst, 2795, Riha, E. 1990
- Augst, 2918, Riha, E. 1990
- Augst, 2919, Riha, E. 1990
- Augst, 2926, Riha, E. 1990
- Briarres-sur-Essone, canton Puiseaux, Abb17 4, Zeiss, H. 1941
- Caernarfon (Segontium), 49, Allason-Jones, L. 1993
- Camerton, near Bath, fig. 57 4B, Wedlake, W. 1958
- Chartres, sép. 765 C77. 7382. 4, Maison d'Archéologie, Chartres
- Chartham, Kent, IA/96-38 80, Canterbury Archaeological Trust
- Colchester, 1598 BUC1549, Crummy, N. 1983
- Colchester, 1601 IRB47, Crummy, N. 1983
- Colchester, 1610 BUC13, Crummy, N. 1983
- Colchester, 1650 BUC1565, Crummy, N. 1983
- Dunstable, grave SS fig. 29 10, Matthews, C. 1981
- Dunstable, grave SS fig. 29 11, Matthews, C. 1981
- Dunstable, grave SS fig. 29 9, Matthews, C. 1981
- Frénouville, T. 180 3, Pilet, C. 1980
- Frénouville, T. 286 4, Pilet, C. 1980
- Frénouville, T. 575 1, Pilet, C. 1980
- Frénouville, T. 590 4, Pilet, C. 1980
- Frénouville, T. 600 1, Pilet, C. 1980
- Krefeld-Gellep, grave 1061 14, Pirling, R. 1966
- Krefeld-Gellep, grave 881, Pirling, R. 1966
- Krefeld-Gellep, grave 1470 4, Pirling, R. 1974
- Krefeld-Gellep, grave 3411 7, Pirling, R. 1989
- Lankhills, Winchester, SF 239, Clarke, G. 1976
- Lankhills, Winchester, SF 439 grave 323, Clarke, G. 1976
- Lankhills, Winchester, SF 81, Clarke, G. 1976
- Lankhills, Winchester, SF 88F, Clarke, G. 1976
- Lankhills, SF 453, Clarke, G. 1979
- Lankhills, SF 454, Clarke G. 1979
- Lauriacum (Enns), grave 34 2, Vetters, H. & Karnitsch, P. et al, 1960
- Lauriacum (Enns), grave 34 3, Vetters, H. & Karnitsch, P. et al, 1960
- Lisieux, tranche moderne, Service d'Archéologie, Calvados
- Nijmegen, Ma1952/127, Steures, D.unpublished
- Nijmegen, LN1957/109, Steures, D. unpublished
- Noyelles-sur-mer, Baie de Somme, sép. 5 2, Piton, D. & Marchand, H. 1978
- Oudenburg, plate XXII 5, Mertens, J. & Van Impe, L. 1971



Portchester Castle, 24A 2628, Cunliffe , B. et al, 1975  
 Regensburg, grave 1115 5 Taf. 14, Von Schnurbein, S. 1977  
 Regensburg, grave 922 2, Von Schnurbein, S. 1977  
 Somogyzsil, grave 133 3, Burger, A. 1979  
 Strasbourg, Taf. XXXIX18887, Forrer, R. 1927  
 Tournai, grave 166 4, Brulet, R. & Coulon, G. 1977  
 Vermand, plate XIX 17, Eck, T. 1891  
 Vermand, plate XIX 21, Eck, T. 1891  
 Vron, t. 198a 4, Seiller, C. unpublished  
 Worms, 5134, RGZM illustrated in inventory book

**Undecorated solid penannular bracelets (4th or 5th cent date)**

Augst, 2929, Riha, E. 1990  
 Chartres, sép. 758 C77. 7309. 2, Maison d'Archéologie, Chartres  
 Bürgele bei Gundremmingen, Taf. 7 3, Bersu, G. 1964  
 Dunapentele, grave 167 4, Bóna, I. & Vágo, E. 1976  
 Dunapentele, grave 82 5, Bóna, I. & Vágo, E. 1976  
 Keszthely-Dobogó, grave 10 3, Sagi, K. 1981  
 Krefeld-Gellep, grave 1291 6, Pirling, R. 1974  
 Oudenburg, plate IV 1, Mertens & Van Impe, 1971  
 Pfaffenhofen, Taf. 18 5, Keller, E. 1971  
 Sagvar, grave 279 1, Burger, A. 1966  
 Sagvar, grave 282 1, Burger, A. 1966  
 Sagvar, grave 9 3, Burger, A. 1966  
 Somogyzsil, grave 141 8, Burger, A. 1979  
 Somogyzsil, grave 52 12b, Burger, A. 1979  
 Tongeren, 1348/1937/B2iii, Gallo-Romeins Museum Tongeren  
 Tongeren, no.inv.(3), Gallo-Romeins Museum Tongeren  
 Worms, 9709, RGZM, illustrated in inventory book

**Undecorated solid penannular bracelets with tapered ends**

Augst, 2915, Riha, E. 1990  
 Dunapentele, 7, Alföldi, M. 1957  
 Dunapentele, 10, Alföldi, M. 1957  
 Keszthely-Dobogó, grave 101 1, Sagi, K. 1981  
 Keszthely-Dobogó, grave 110 6a, Sagi, K. 1981  
 Luxembourg (no further prov), 1900-3/463, Musée d'Histoire et d'Art, Luxembourg  
 Oudenburg, plate IV 2, Mertens, J. & Van Impe, L. 1971  
 Oudenburg, plate IV 4, Mertens, J. & Van Impe, L. 1971  
 Redl, Taf. 20 6, Keller, E. 1971  
 Regensburg, grave 509 5, Von Schnurbein, S. 1977  
 Regensburg, grave 509 6, Von Schnurbein, S. 1977



Regensburg, grave 509 8, Von Schnurbein, S. 1977  
 Regensburg, grave 924 3, Von Schnurbein, S. 1977  
 Regensburg, Taf. 164 8, Von Schnurbein, S. 1977  
 Sagvar, grave 283 4a, Burger, A. 1966  
 Somogyzsil, grave 38 2a, Burger, A. 1979  
 Strasbourg, 18825, Musée des Antiquités et d'Archéologie, Strasbourg  
 Tongeren, 156 1, Vanvinckenroye, W. 1984  
 Tongeren, grave 44 1, Vanvinckenroye, W. 1984  
 Vron, t. 241a 4, Seiller, C. unpublished  
 Wessling, Taf. 42 1, Keller, E. 1971  
 Worms, 5132, RGZM illustrated in inventory book

**Bracelets with twisted square section in 4th or 5th century contexts**

St. Albans, fig. 10 68, Frere, S. 1984  
 Augst, 2920, Riha, E. 1990  
 Augst, 590, Riha, E. 1990  
 Augst, 591, Riha, E. 1990  
 Augst, 592, Riha, E. 1990  
 Augst, 593, Riha, E. 1990  
 Augst, 594, Riha, E. 1990  
 Augst, 2918, Riha, E. 1990  
 Augst, 2919, Riha, E. 1990  
 Bletsoe, Bedfordshire, fig. 5. 27, Dawson, M. 1994  
 Chartham, Kent, IA/96-35 130, Canterbury Archaeological Trust  
 Colchester, 1590 BUC5, Crummy, N. 1983  
 Colchester, 1591, Crummy, N. 1983  
 Colchester, 1602 IRB102, Crummy, N. 1983  
 Dunapentele, grave 1239 9, Bóna, I. & Vágo, E. 1976  
 Dunstable, grave SS fig. 29 12, Matthews, C. 1981  
 Gatcombe, W of Bristol, fig. 26 524, Branigan, K. 1977  
 Gatcombe, W of Bristol, fig. 26 528, Branigan, K. 1977  
 Gatcombe, W of Bristol, fig. 26 530, Branigan, K. 1977  
 Gatcombe, W of Bristol, fig. 26 533, Branigan, K. 1977  
 Gatcombe, W of Bristol, fig. 27 529, Branigan, K. 1977  
 Icklingham, fig. 39 11, West, S. & Plouviez, J. 1976  
 Icklingham, fig. 39 9, West, S. & Plouviez, J. 1976  
 Lankhills, Winchester, SF 219, Clarke, G. 1976  
 Lankhills, Winchester, SF 30 grave 40, Clarke, G. 1976  
 Lankhills, Winchester, SF 31 grave 40, Clarke, G. 1976  
 Lankhills, SF 442 grave 323, Clarke, G. 1976  
 Lankhills, SF 319, Clarke, G. 1979  
 Mailly-le-Camp NW Trouan, 278, Ravaux, J. 1992



Mailly-le-Camp NW Trouan, 279, Ravaux, J. 1992  
 Mayen, grave 3 f, Habery, W. 1942  
 Nijmegen, Brk1951/42, Steures, D.unpublished.  
 Oudenburg, plate XXII 6, Mertens, J. & Van Impe, L. 1971  
 Sagvar, fig. 124 7, Burger, A. 1966  
 Shakenoak, Ill131, Brodribb, A.et al, 1972  
 Springhead, fig. 5 2, Penn, W. 1962  
 Straubing-Sorviodurum, Taf. 100 24, Walke, N. 1965  
 Strasbourg, 18847, Musée des Antiquités et d'Archéologie, Strasbourg  
 Tournai, grave 1 11, Brulet, R. & Coulon, G. 1977  
 Vindolanda (Chesterholm), 45, Bidwell, P. 1985  
 Wessling, Taf. 41 2, Keller, E. 1971

### **Bracelets with cogwheel decoration**

St. Albans, fig. 54 3, Cool, H. 1983  
 Ancaster, Lincs. fig. 53 2, Cool, H. 1983  
 Bletsoe, Bedfordshire, fig. 5. 28, Dawson, M. 1994  
 Bletsoe, Bedfordshire, fig. 5. 32, Dawson, M. 1994  
 Bletsoe, Bedfordshire, fig. 5. 39, Dawson, M. 1994  
 Bletsoe, Bedfordshire, fig. 5. 41, Dawson, M. 1994  
 Bletsoe, Bedfordshire, fig. 5. 44, Dawson, M. 1994  
 Caernarfon (Segontium), 37, Casey, P. & Davies, J. 1993  
 Caerleon, fig. 8 34, Fox, A. 1940  
 Caerwent, fig. 52 2, Cool, H. 1983  
 Caister-by-Yarmouth, fig. 50 178, Darling, M. & Gurney, D. 1993  
 Canterbury, Cakebread Robey 287, Canterbury Archaeological Trust  
 Canterbury, Cakebread Robey 360, Canterbury Arch.Trust  
 Canterbury, Cakebread Robey 98, Canterbury Arch.Trust  
 Canterbury, Adelaide Place 120, Canterbury Archaeological Trust  
 Canterbury, St. Radygunds 187, Canterbury Archaeological Trust  
 Canterbury, St. Radygunds 351, Canterbury Archaeological Trust  
 Canterbury, 361, Blockley, K.et al, 1995  
 Chesterford, Essex, 96 5-1 52, British Museum  
 Cirencester, 44, Mackreth, D. 1982  
 Cirencester, fig. 53 8, Cool, H. 1983  
 Cirencester, fig. 54 6, Cool, H. 1983  
 Cirencester, fig. 57 2, Cool, H. 1983  
 Colchester, 1658, Crummy, N. 1983  
 Colchester, 1659 BUC388, Crummy, N. 1983  
 Colchester, 1660, Crummy, N. 1983  
 Colchester, 1661, Crummy, N. 1983  
 Colchester, 1662, Crummy, N. 1983



Colchester, 1663, Crummy, N. 1983  
 Colchester, 1664, Crummy, N. 1983  
 Colchester, fig. 53 1, Cool, H. 1983  
 Coventinas Well, 63, Allason-Jones, L. & McKay, B. 1985  
 Coventinas Well, 64, Allason-Jones, L. & McKay, B. 1985  
 Dorchester on Thames, fig. 20 9, Rowley, T. & Brown, L. 1981  
 Dorchester on Thames, fig. 29 2, Kirk, J. & Leeds, E. 1952/3  
 Dorchester on Thames, fig. 29 5, Kirk, J. & Leeds, E. 1952/3  
 Dragonby, North Lincolnshire, fig. 11. 19 9, May, J. 1996  
 Gatcombe, W of Bristol, fig. 26 525, Branigan, K. 1977  
 Jordan's Hill, Preston, Dorset, plate I, Drew, C. 1931  
 Lankhills, Winchester, SF 343 grave 336, Clarke, G. 1976  
 Lankhills, Winchester, SF 437 grave 323, Clarke, G. 1976  
 Lankhills, Winchester, SF 554, Clarke, G. 1976  
 Lankhills, Winchester, SF 568, Clarke, G. 1976  
 Leicester, fig. 83 1, Kenyon, K. 1948  
 Leicester, fig 83 3, Kenyon, K. 1948  
 Lowbury Hill, nr Aldworth, Berkshire, plate XII, Atkinson, D. 1916  
 Lydney, fig. 17 58, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Lydney, fig. 17 m, Wheeler, R.E.M. & Wheeler, T.V. 1932  
 Narborough, Norfolk, fig. 53 6, Cool, H. 1983  
 Oudenburg, plate XXVI 4, Mertens, J. & Van Impe, L. 1971  
 Portchester Castle, 42 595, Cunliffe, B. et al, 1975  
 Poundbury, 3 Ae69, Farwell, D. & Molleson, T. 1993  
 Rochester, Kent, fig. 10 14, Cool, H. 1981  
 Silchester, fig. 52 4, Cool, H. 1983  
 Silchester, fig. 52 5, Cool, H. 1983  
 Silchester, fig. 53 3, Cool, H. 1983  
 Silchester, fig. 53 5, Cool, H. 1983  
 Silchester, fig. 60 8, Cool, H. 1983 probably cogwheel  
 South Shields, 3. 238, Allason-Jones, L. & Milet, R. 1984  
 Uley, 1 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 16 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 2 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 27 4094, Woodward, A. & Leach, P. 1993  
 Uley, 3 fig 128, Woodward, A. & Leach, P. 1993  
 Uley, 8 fig 128, Woodward, A. & Leach, P. 1993

#### **Bracelets with cut-out sun motif**

Canterbury, 384, Blockley, K. et al, 1995  
 Gatcombe, W of Bristol, fig. 27 553, Branigan, K. 1977  
 Lankhills, Winchester, SF 566, Clarke, G. 1976



Woodeaton, Oxon, fig. 9 6, Kirk, J. 1949

**Bracelets with imitation beaded decoration ( short and long alternating sections)**

St. Albans, fig. 10 65, Frere, S. 1984

St. Albans, fig. 10 66, Frere, S. 1984

St. Albans, fig. 10 67, Frere, S. 1984

Augst, 541, Riha, E. 1990

Basel, grave 300(5), Degen, R. 1957

Bath, Avon, fig. 58 4, Cool, H. 1983

Bath, Avon, fig. 58 6, Cool, H. 1983

Bletsoe, Bedfordshire, fig. 5. 38, Dawson, M. 1994

Brény, Aisne (approx pt in Aisne), pl. 9 5 new ser. Moreau, F. 1881

Canterbury, St. Johns Lane 21 (SF221), Canterbury Archaeological Trust

Canterbury, 388, Blockley, K. et al, 1995

Colchester, 1715 LWC 1876, Crummy, N. 1983

Colchester, 1717 BUC603, Crummy, N. 1983

Colchester, 1719 BUC1550, Crummy, N. 1983

Colchester, 1720, Crummy, N. 1983

Colchester, 1721 BUC1567, Crummy, N. 1983

Dunapentele, grave 1185 6, Bóna, I. & Vágo, E. 1976

Godmanchester, Cambs. fig 4 4, Frend, W. 1968

Icklingham, fig 39 7, West, S. & Plouviez, J. 1976

Lankhills, SF 555, Clarke, G. 1979

Kingscote, Glos. fig. 58 7, Cool, H. 1983

Oudenburg, plate LXV 5, Mertens, J. & Van Impe, L. 1971

Poundbury, 15 Ae 112, Farwell, D. & Molleson, T. 1993

Poundbury, 4 Ae69, Farwell, D. & Molleson, T. 1993

Silchester, fig. 61 2, Cool, H. 1983

Somogyzsil, grave 129 4, Burger, A. 1979

Somogyzsil, grave 75 5, Burger, A. 1979

Woodeaton, Oxon, fig. 4 8, Kirk, J. 1949

Woodeaton, Oxon, fig. 4 12, Kirk, J. 1949

**BUCKLES AND BELT FITTINGS: ADDITIONAL DATA**

**Sorte 1 Form A Type A**

Bad Deutsch-Altenburg, Bruck an der Leitha, Abb. 496, Adler, H. ed. 1987

Caister-by-Yarmouth, fig. 104 743, Darling, M. & Gurney, D. 1993

Canterbury, 414, Blockley, K. et al, 1995

Kirchheim bei München, grave 7 Abb. 5 6, Keller, E. 1989

Kloster Neuburg, grave 5 3, Neugebauer, J. & Neugebauer, C. 1986

Köln, grave 107 9, Friedhoff, U. 1991



Köln, D258, Römisch-Germanisches Museum, Köln  
 Krefeld-Gellep, grave 2915 14, Pirling, R. 1989  
 Krefeld-Gellep, grave 2996, Pirling, R. 1989  
 Krefeld-Gellep, grave 3010, Pirling, R. 1989  
 Lankhills, Winchester, SF 122 grave 106, Clarke, G. 1976  
 Lankhills, Winchester, SF 27 grave 23, Clarke, G. 1976  
 Lankhills, Winchester, SF 481, Clarke, G. 1976  
 Lankhills, Winchester, SF 533 grave 426, Clarke, G. 1976  
 Meaux, 248. 4, Landais & Giraud, 1984  
 Nijmegen, Ma1952/30, Steures, D.unpublished  
 Poivres champ-la-cave NE Trouan, 356, Ravaux, J. 1992  
 Stein-am-Rhein, Taf. 41 grave 5 3, Höneisen, M.ed. 1993  
 Tongeren, 10. 201(d), Musées Royaux d'Art et d'Histoire, Bruxelles  
 Tongeren, pl.V 10, Vanvinckenroye, W. 1995  
 Tulln, grave 49 Abb24, Mayr, U. & Winkler, K. 1991  
 Tulln, grave 49 Abb26, Mayr, U. & Winkler, K. 1991

#### **Sorte 1 Form A Typ B**

Budapest (Aquincum), grave 88, Tópal, J. 1993  
 Chartres, C77 7227. 5, Maison d'Archéologie, Chartres  
 Köln, D261, Römisch-Germanisches Museum, Köln  
 Krefeld-Gellep, grave 2922 4, Pirling, R. 1989  
 Krefeld-Gellep, grave 2991, Pirling, R. 1989  
 Lankhills, Winchester, SF 70 grave 81, Clarke, G. 1976  
 Zurndorf, VB Neusiedl am See, Abb. 463, Adler, H.ed. 1988

#### **Sorte 1 Form C Typ A**

Chartres, C77 6360. 12, Maison d'Archéologie, Chartres  
 Chartres, C77 6360. 13, Maison d'Archéologie, Chartres  
 Gatcombe, W of Bristol, fig. 27 541, Branigan, K. 1977  
 Illzach, D. 83. 6. 47, Musée Historique de Mulhouse  
 Krefeld-Gellep, grave 2911 11, Pirling, R. 1989  
 Krefeld-Gellep, grave 3025, Pirling, R. 1989  
 Lankhills, Winchester, SF 126 grave 106, Clarke, G. 1976  
 Lisieux, sép. 932, Service d'Archéologie, Calvados  
 Lisieux, sép828, Service d'Archéologie, Calvados,  
 Lisieux, sép968, Service d'Archéologie, Calvados,  
 Münchhof, VB Neusiedl-am-See, Abb. 577, Adler, H.ed, 1992  
 Nijmegen, Brk1951/143(a), Steures, D.unpublished  
 Nijmegen, Brk1951/57, Steures, D.unpublished  
 Nijmegen, Ma1951/143(b), Steures, D.unpublished  
 Nijmegen, Ma1952/101, Steures, D.unpublished



Nijmegen, 1951g.D143, GM Kam Museum, Nijmegen  
 Nijmegen, 1951graveD143, GM Kam Museum, Nijmegen  
 Pierre-Solain, Le Manoir, Calvados, 433a, Bayeaux Musée Baron Gerard  
 Poivres champ-la-cave NE Trouan, 350, Ravaux, J. 1992  
 Tokod, grave 19, Mócsy, A. 1981  
 Tongeren, grave 158 1, Vanvinckenroye, W. 1984,  
 Tongeren, 2131, Gallo-Romeins Museum Tongeren,  
 Waudrez, B2287. 12, Musées Royaux d'Art et d'Histoire, Bruxelles  
 Virton, 12, Masséart, C. unpubl. excav

#### **Sorte 1 Form C Type B**

Chartres, C77 7215. 2, Maison d'Archéologie, Chartres  
 Chartres, C77. 7220. 3, Maison d'Archéologie, Chartres  
 Chartres, C77. 7384. 3, Maison d'Archéologie, Chartres  
 Chartres, C. 77. 7227. 3, Maison d'Archéologie, Chartres  
 Kobern-Gondorf, Taf. 19 1, Schulze-Dörlamm, M. 1990  
 Krefeld-Gellep, grave 2942, Pirling, R. 1989  
 Lisieux, sép790, Service d'Archéologie, Calvados  
 Luxembourg (no further prov), no ref lge, Musée d'Histoire et d'Art, Luxembourg  
 Poivres champ-la-cave NE Trouan, 352, Ravaux, J. 1992  
 Tokod, grave 100, Mócsy, A. 1981  
 Tokod, grave 87, Mócsy, A. 1981  
 Tongeren, grave 53 a, Vanvinckenroye, W. 1984  
 Tulln, grave 11 Abb16, Mayr, U. & Winkler, K. 1991  
 Vron, t. 174a 4, Seiller, C. unpublished  
 Vron, t. 200a 4, Seiller, C. unpublished  
 Vron, t. 202a 4, Seiller, C. unpublished  
 Vron, t. 214a 4, Seiller, C. unpublished  
 Vron, t. 234a, Seiller, C. unpublished

#### **Sorte 1 Form C Typ C**

Canterbury, 415, Blockley, K.et al, 1995  
 Lankhills, Winchester, SF 279 grave 234, Clarke, G. 1976  
 Lisieux, sép847, Service d'Archéologie, Calvados

#### **Sorte 1 Form C Typ E**

Christnach, B2998, Musées Royaux d'Art et d'histoire, Bruxelles  
 Tongeren, 10. 201, Musées Royaux d'Art et d'Histoire, Bruxelles



## **Sorte 1 Form C Typ F**

### **Variation 1a**

Vron, t. 244a 4, Seiller, C. unpublished

Vron, t. 250a 3, Seiller, C. unpublished

Vron, t. 251a 3, Seiller, C. unpublished

Vron, t. 260a, Seiller, C. unpublished

### **Variation 1c**

Herstal, Liège, 4/12, Musée Curtius, Liège

Herstal, Liège, 4/13, Musée Curtius, Liège

### **Variation 4a**

Azlburg, Straubing, Abb. 128, Prammer, J. 1989

Tongeren, pl.IV. 11a, Vanvinckenroye, W. 1995

Tongeren, 72L103, Gallo-Romeins Museum Tongeren

### **Variation 4c**

Lankhills, Winchester, SF 498, Clarke, G. 1976

Vron, t. 253a 3, Seiller, C. unpublished

## **Sorte 2 Form D**

Koborn-Gondorf, Taf. 18 27, Schulze-Dörlamm, M. 1990

St. Vigor le Grand, Pouligny, no inventory number, Musée Baron Gérard, Bayeaux, & Marin, J.ed, 1990

## **Sorte 3 Type F**

Dalheim, 1900-1/354, Musée d'Histoire et d'Art, Luxembourg

Nijmegen, Brk1952/159171, Steures, D.unpublished

Poivres champ-la-cave NE Trouan, 354, Ravaux, J. 1992